The Builder.

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Some Annual Vestry and Local Board Reports.

THE annual Reports on the work done in their respective districts, which are compiled by the Surveyors to most of the London Vestries, contain a great many facts and suggestions of interest, as showing the rate at which a district is increasing, its sanitary condition and the special difficulties which have to be dealt with in it; and not infrequently we come upon useful records derived from the experience and observation of the Surveyor on such points as the durability or convenience of special methods of paving, the practical working of sanitary regulations, and other matters of practical importance.

We have before us several of these reports, recently issued. One of the longest and most elaborate is the sixteenth annual report of Mr. O. Claude Robson, Engineer and Surveyor to the Willesden Local Board. The matter of roads is the first taken up in it, and we learn that the total length of roads under the control of the Board is now over thirty-six miles, with an increase of 1 mile 3 furlongs and 18 yards since last year, representing fifteen new streets made up at the cost of the owners of property under section 150 of the Public Health Act of 1875. The formation of roadway adopted is 12 in. of broken-brick rubbish and 6 in. of screened gravel laid on in two layers of 3 in. each, and consolidated with a 10-ton steam-roller. A note is made in regard to probable extra cost of maintenance of one road which has become an omnibus route, "Only one of many instances where extra public expenditure is caused by omnibus traffic, which possibly causes more damage to carriage-ways than any other traffic they have to sustain," a point to be borne in mind in considering the construction and estimating for the maintenance of roads which are likely to have omnibus traffic. In the case of a narrow portion of Cambridge-road, the Surveyor notes that on this account and in such a situation wood-paving would prove more economical than granite in respect of maintenance. Another point touched upon is the bad state of the roads (bridge approaches) which are in the hands of the London and North-Western Railway Company. With most of the railway companies the Board has entered into an arrangement to maintain the carriage-ways for a stated sum per annum and to adopt and repair all pathways, upon the company paving them in the first instance to the satisfaction of the Board. The L. & N.-W.R. Company has refused this arrangement, and apparently will not itself repair its roads properly, and the report suggests that some decisive action should be taken to compel the company to do so. Such a state of things is very discreditable to such a powerful and wealthy company.

Among additional powers obtained recently by the Willesden Board we are glad to see that there is one for "planting and maintaining trees in any public highway," and that the Board has already ordered the planting of 600 trees. It could not be doing a better work. In regard to road-paving, which is a question a good deal discussed at present, Mr. Robson's experience is that both the Granolithic paving and that of the Imperial Stone Company have worn exceedingly well for foot-walks, during two or three years' trial, but he does not recommend these pavings where the footpaths are likely to be broken up by building operations or the laying of gas and water services, &c., as they assume an unsightly appearance and the cost of repair is considerable.

Several new sewers have been formed during the year, in one case replacing an old one which is described as "silted up for nearly half its diameter, and at the upper end it was laid perfectly horizontal. No manholes or ventilators existed." In regard to these latter, we find that the experiment of substituting for the road grating upcast ventilating shafts attached to the highest buildings attainable has been pretty extensively carried on in the Willesden district. "The outlet from the sewer has been generally taken from an existing manhole, the connecting portion of pipe between the manhole and the perpendicular pipe graduating from 15 in. or 12 in. in diameter to 6 in. At the foot of the upright pipe a small chamber was constructed to receive any scaling that might occur from the iron pipe and to afford facilities for cleansing." Where these ventilating pipes have been fixed (not without a good deal of opposition in some cases) the surface grids within 100 or 150 yards are blocked. Mr. Robson has instituted a series of daily tests of the air currents in such shafts, and finds that with many of them a current of 550 ft. lineal, or 108 cubic feet per minute, has been obtained for a long period; but a fuller report is to be published when the tests for the entire year of their installation have been taken. The question is so important, and the differences of opinion on it so great, that all information on results is useful.

We should also direct public attention to the important portion of this report dealing with the treatment of sewage. The Board seem to be doing all they can to secure a proper effluent to pass into the Brent, and have for the present obtained a satisfactory disposal of the solids of the sewage over land, but it is stated in the report not only that the tanks and filter-beds are inadequate for their work, but that the condition of the Brent itself is exceedingly bad, on which point, and the reasons for it, we will quote the words of the report:—

"The general condition of the river is so deplorable that little good can be effected until it is properly cleansed, straightened, and bed-levelled almost from source to finish. At present in dry seasons all water east of Edgware-road is arrested by the Canal Company for storage in the Welsh Harp reservoir. In exceptionally wet seasons the sluices are opened and a deluge contributed from the reservoir to the lower portions of the river. Thus when wanted no water is forthcoming; when it could be dispensed with, too great generosity is shown by the Canal Company in supply. As stated on former occasions, I am strongly of opinion that the company possess no statutory rights as to discretion in this matter, but that the daily normal flow from the reaches above the reservoir shall be contributed to the lower river, the storage taking place only during the rainy seasons when the upper river yields an abnormal supply. The matter is now referred to the solicitor of the Board for his report, and I trust it may result in the company being compelled to provide the normal daily flow to the river passing through the Willesden parish, instead of diverting the entire flow in dry seasons by the feeder to the canal.

Pending, however, any action on the above, the condition of the river at the present time demands attention. So bad is it in some parts that I have been compelled to execute certain works for cleansing same and promoting a flow of water. At intervals deep pools exist, containing the deposit of years,

with obstructions on either side holding back decaying vegetation. Indeed, it can scarcely be called a river, no stream being apparent for three-fourths of its course, but it is rather a series of foul pools, separated from each other by fallen trees and other obstacles over which the top water from the pools slowly trickles. I have in several instances examined these pools and find them to be largely filled with a black and foul deposit. It is, therefore, hopeless to attempt to purify sewage that has eventually to pass through such contaminating media as these pools. Their condition is the result of years of neglect, nothing having been done to the river to my knowledge for the last seventeen years, which period might possibly be increased by the addition of fifty more years. The pools, therefore, have been receiving the crude sewage of Willesden for a considerable time, during which they have acted as cesspools, with an overflow from one to the other. It is through these cesspools the effluent from the sewage works has to be taken, and the condition of the river is erroneously ascribed to the effluent from the works, rather than the decomposing medium of the old cesspools receiving the crude sewage in days before the construction of the Brent sewerage system."

It appears that there are no Conservators of the Brent, and the Surveyor recommends that the Board should take the responsibility of dealing with the river, rather than leave it to remain in its present state. It would probably be their wisest course, although no doubt it is a serious business for a Board to undertake which is not under any legal responsibility in the matter. The much-vexed question as to the disposal of crops grown on the sewage-filtering land is touched upon in another page of the report. There is, as is often the case, a prejudice to be encountered in the sale of the rye-grass and other crops on account of their being grown under sewage treatment. The financial results, it is observed, might be better if it were possible to arrange for intermittent flooding, but the small area of the ground and the large quantity of sewage to be dealt with renders this impossible. But even if intermittent treatment could be provided for, the Surveyor remarks that he should not anticipate any increase of receipts commensurate with the cost of working, "the main question for consideration being the purification of the sewage, the sale of produce being but a secondary matter;" which is the sensible view to take of the matter. Another passage in the report we may quote in regard to the important sanitary subject of dustbins:—

"I am glad to report that the clumsy and insanitary fixed dustbin is speedily becoming a thing of the past, the movable zinc or iron bins being adopted in place thereof. Some difficulty is encountered in new houses by the By-laws still continuing to specify the erection of a dustbin in brickwork, and no powers seem to exist under the By-laws to compel the builders to supply the movable bin instead. In some cases, no bin whatever is constructed, and the tenant is left to supply the movable bin. It appears desirable to amend the By-law relating to dustbins in such a way as to ensure the provision of movable bins for all new houses prior to occupation. The provision of these movable receptacles is not only a desirable sanitary measure, but it is a great assistance to the speedy and cleanly collection of the refuse."

Another point which is alluded to in the report is that in the list of miscellaneous buildings erected are eighteen conservatories, the larger number of which were so placed as to open from and practically block the only window through which ventilation from the external air could be admitted into a room. Mr. Robson is certainly right in his contention that such an erection constitutes an infringement of the Building By-laws of the Board, which require every habitable room to be provided with a window-area of at least one-tenth of the floor-space of the room to which it is attached. The Board were very loth, naturally, to interfere with what is in many ways so agreeable and pleasing an addition to a house as a conservatory, and appear to have taken a lenient view of the matter, on the ground that more currents of fresh air would find their way in through a structure of this kind than through a more permanent structure; but we certainly support the opinion of the Surveyor that, for a considerable part of the year at all events, when the conservatory would probably be kept shut, the distinction is more imaginary than real, and that such an erection is a danger to health.

We have devoted more space to this report than we can give to others before us, because it is an exceptionally thoughtful and well-written one, and is valuable as giving not only mere schedules of facts, but the results of experience in a good many cases, and we may congratulate both the Willesden Board and their Surveyor on the admirable way in which this report is drawn up. It may not be desirable or possible always to go into large sanitary questions at such length in a report of this kind, but such a review of the position from time to time is exceedingly useful and beneficial. The report of the Vestry of Fulham is a very long and elaborate one, in which the reports of the Surveyor, Mr. Norrington, and the New Streets Surveyor, Mr. Sykes, are included; these two reports are also issued separately. We have referred already to the latter report (page 272, *ante*), the second annual one that has been issued, and to the sub-report which it includes in regard to the relative merits of York and of artificial stone paving; we may observe here that, while Mr. Sykes is evidently disposed to regard artificial stone pavement very favourably in many ways (and the statistics given as to relative wear of York and artificial stone justify this opinion), he records the same objection against it which is mentioned in Mr. Robson's report to the Willesden Board: "I could not recommend the adoption of the 'In Situ' pavement in a growing neighbourhood like Fulham, and where, owing to building operations, the gas and water companies are almost daily disturbing the pavement." The extent to which Fulham is "growing" is indeed strikingly illustrated in the special report on the question whether the Vestry should make up all new streets with their own workmen instead of letting them out to contractors. From this part of the report it appears that 150 new roads are now ordered to be constructed in Fulham, at a roughly-estimated outlay of 75,000*l.*, and that to develop the whole of the area not yet built over would require not less than 350 new streets. The only object of the Vestry undertaking is, of course, a possible saving in cost, but it is probable this would be so small as hardly to be felt by individual ratepayers, and as Mr. Sykes very truly points out, no roads are so expensive in the end as cheaply-made roads. The large staff that would have to be engaged might at times have to be idle; and on the whole we should conclude that the Vestry would find the disadvantages to themselves and the public overbalance the advantages. Mr. Norrington's Fifth Annual Report is for the most part a set of tabular statements and schedules, not without general interest however, especially in regard to the important subject of roadways. A short comparison of expenditure in granite for macadam from 1886-7 to the present year shows that while the cost of the granite has increased during that time from 11s. per yard to 13s. 9d., the expenditure on this material has decreased from 2,374*l.* to 2,084*l.* though the number of roads maintained has largely increased; in other words, that the Vestry are starving the roads. The Surveyor observes that it has been his unpleasant duty year after year to call the attention of the Vestry to this reduction of the estimates for granite, and observes:—"My first annual report pointed out that the best, and practically the cheapest, policy is to maintain as far as possible a macadamised road in a perfect condition, because immediately it gets out of repair the wet remains on the surface and assists the deterioration."

The Surveyor is perfectly right, and it is to be hoped the Vestry will at last listen to and act on his repeated advice. They have acted upon it in another road-making item, in obtaining creosoted blocks for wood paving in place of plain deal, in reference to which we observe that "the wood-paving laid in Fulham-road in 1885" (plain deal, we presume) "will soon, I fear, require to be entirely re-laid:" another example of the costliness of cheap roads. The complaint is made that the sewers under the charge of the London County Council in the district are inefficiently ventilated, that the ventilators to these sewers average 700 ft. apart while the Vestry places them 200 ft. apart; also that "the whole of the sewers in this district are liable to be surcharged at the time of heavy rains, so that frequently the water floods the cellars of houses, and the sewers remain charged for many hours. This seems to point to a deficiency of pumping power at the Victoria pumping station." We may quote another significant paragraph which seems urgently to demand attention in a "growing neighbourhood:"

"The importance of laying out the 12 acres known as Bishop's Meadow and West Meadow as a Park without further delay, the land having been allowed to remain in its present discreditable condition, with the area being decreased by the action of the river, since the original grant in 1884, and the Ecclesiastical Commissioners have during the year threatened to reconsider the question of the grant."

The Report of the Wimbledon Local Board bears no Surveyor's name, and is in fact a pamphlet published for the information of ratepayers as to existing facts. It notes with satisfaction the gradual decrease in the number of empty houses; in 1885 there were 792 houses empty, as compared with 271 at present. It is noted that an engagement has been entered into with the "Amines" syndicate for the use of their chemical sewage treatment for one year from January 1, 1891, and it is to be hoped that the next annual report will give some useful information as to the results of this process. The table of expenditure and receipts of the sewage farm (70 acres) from 1887 to 1891 shows a fairly satisfactory result:—

	Receipts.	Expenditure.
1887 ...	£1,019 9 2	..... £993 5 9
1888 ...	1,414 15 10	..... 897 2 1
1889 ...	1,186 7 2	..... 811 4 3
1890 ...	1,202 1 1	..... 833 0 1
1891 ...	1,026 9 1	..... 830 6 6

The table of receipts must be to some extent discounted by the fact that about 300*l.* a year of it represents produce consumed by the Board's horses, so it cannot be assumed that there is that proportion of public sale value for it in proportion to expenditure.

Mr. Lovegrove's report to the Hackney Board of Works, which is comparatively short and business-like in character, bestows a good deal of attention on that increasing difficulty in London, removal of refuse. Mr. Lovegrove refers chiefly to road sweepings, and the difficulty of dealing promptly with these in wet weather owing to the great distance to the only available shoots. "The subject of removal by barge has been considered, but the results of inquiries tend to show that the cost when in the barge would be equal to the cost of carting to the barge, thus doubling the cost." A page is devoted to the work done in the snowfalls of last winter, which were dealt with chiefly by the hiring of extra labour and cartage. The whole cost of the two snowfalls was 1,442*l.* 15s. 10d., and even with that expenditure the work could not be fully met. A special paragraph on "street litter" draws attention to a constant source of untidiness and insanitary conditions in the east and north districts of London:—

"Some tradesmen expend large sums in the decoration of their shops, and exercise great skill in the display of their wares, but are exceedingly careless as to the condition of the channel and roadway in front; sawdust, straw, paper, &c., are swept out or allowed to fall and remain in a very untidy condition, and much of this is carried by the wind over the road, making it untidy, often opposite the premises of more tidy neighbours. Tradesmen's and other advertisement bills are freely scattered in large numbers about the roads; also straw from egg boxes, crockery crates, and carts unloading wares, paper from oranges, and other things too numerous to mention. Another source of litter on the highway arises from rubbish carts overloaded, and dropping here a little and there a little on their way to the shoots. Dust carts from neighbouring parishes, loaded high with light refuse, paper, &c., being uncovered, are often relieved by a passing wind."

It is much to be wished that this matter of street-litter were more rigorously dealt with

than it is under existing regulations. The most important portion of Mr. Lovegrove's report consists of a reprint of a report on "storm-floodings" presented to the Board on July 18, 1890, which discloses a very serious state of things in the district in times of heavy rain. Mr. Lovegrove urges the necessity of some relief in the way of additional sewerage for the Hackney portion of the High-level area. "As far as has at present been ascertained, there were twenty-three houses and a number of yards flooded in the Low-level area, and fifty-two in the High-level, making a total of seventy-five houses."

The report of the Surveyor to the Parish of St. Luke, Middlesex, gives a table of statistics of the area of carriageways and footways broken up by various companies, which may give some readers a new idea as to the extent to which our streets are annually cut up for the work of gas and water companies, and other requirements. The New River Company has made 682 trenches in St. Luke's district during the year, and disturbed 1,137 superficial yards of granite carriageway; the Gas Light and Coke have made 275 trenches. The London Hydraulic Power Company follows with the modest amount of 8 trenches; but this is certain to increase. How are we to keep our streets in order at all with these constantly-increasing demands to break them up? Could it all have been foreseen, every street would have been made with its accessible subway, but it is far too late for that now. In regard to last winter's snow the Surveyor reports that after 3,000 yards of snow had been carted the storage at his disposal was nearly blocked and he therefore used crushed rock salt "followed by immediate flushing." If the flushing is done immediately, this may be the best course when carting is exhausted. The valid complaint against salt treatment is that of letting it lie on the ground. The fact is, nothing that can be done with a large fall of snow is really satisfactory, because its removal demands resources of plant and labour which cannot be kept in reserve all the year for the chance of a single heavy fall of snow; and the grumble on this subject which is heard through the daily papers every time there is snow is an ignorant and unreasonable one. The serious subject of dealing with refuse occupies a portion of the report. The Surveyor points out that available shoots within easy distance of London have long been closed against house and street refuse; that there is a general demand for higher prices for bargeing; that the employment of women and girls in dust yards will not be allowed much longer, or only on condition of higher wages, and that greatly-increased difficulty has occurred when the canals were ice-bound, an emergency for which the Vestry ought to be prepared. In the face of all these facts, the Surveyor repeats a former recommendation to dispose of rubbish by burning, as the most expeditious and inexpensive manner. If that means the wholesale burning of the whole rubbish of the parish, we fear that will not be done without creating a nuisance of another kind. It may be useful as an auxiliary. The same subject is gone into by Mr. Robson in his report to the Willesden Local Board, already referred to. The difficulty of providing "shoot" for road refuse, he says, is becoming greater every year. He considers the difficulty might be entirely obviated if owners and occupiers of land worked as pasture farms would be willing to receive the material in autumn as a fertilising medium. The objection to this he characterises as a "sentimental" one; perhaps it is to some extent, but one can hardly expect farm owners to take the same views as Town Surveyors on such a subject.

The Surveyor's report to the Chelsea Vestry is chiefly statistical as to work done, with little comment as to results. We note that sewer-ventilators against the sides of houses are also being fixed in that district. About 100 houses have adopted electric light during the year. In regard to snow it is recorded that the cost of removing it was approximately 3,000*l.*, but that "it is quite impossible to say what such a winter costs the Vestry in damage to roads and footways." In regard to the snow question we read that "The usual complaints were received from persons who considered that the snow should be removed from opposite their houses at whatever cost to the rate-payers, but the Vestry adopted their usual policy of refusing to waste money by carting snow from anywhere but the main thoroughfares." There can be little doubt that this is only a reasonable view to take of the matter, and probably the very persons who made the complaints referred to would have been the first to complain if they found a largely increased rate charged for the expenditure in wages and plant which would be required in order to carry out their demands.

A special report by the Chelsea Surveyor is appended on the subject of overhead wires and cables, underground pipes, wire cables, &c., drawn up in accordance with a resolution of the Vestry on Nov. 18, 1890, to the effect "That the Surveyor make a report showing the number of gas and water pipes, and their diameter; cables for electricity, wires overhead and under public roads, their use, and who is responsible for accidents to person or property through defective pipes, wires, laying or fixing, and what tenure they hold." This report is a very full and well-written one, summarising the actual state of things and the existing law on the subject. In the case of overhead wires the report instances cases in which abandoned wires have not been taken down but simply left to decay, until a storm or a fall of snow, or their own weakness, brought them down. The report recommends that the Vestry should ask the Board of Trade to serve regulations on the owners of electric wires, by which some kind of supervision would be obtained; and as regards Post-office, gas, and water mains it is suggested that it would be a great improvement were they required, as the Electric Light Company is, to once in a year correct the maps of their mains and submit a copy to the Vestry, so that there would always be a correct record of all underground works kept at the office. That such a record should be kept correctly seems, indeed, a duty which is absolutely incumbent on the local authority of a parish or district.

DECORATIVE ART OF JAPAN.—III.

BY AN ENGLISH RESIDENT IN JAPAN.

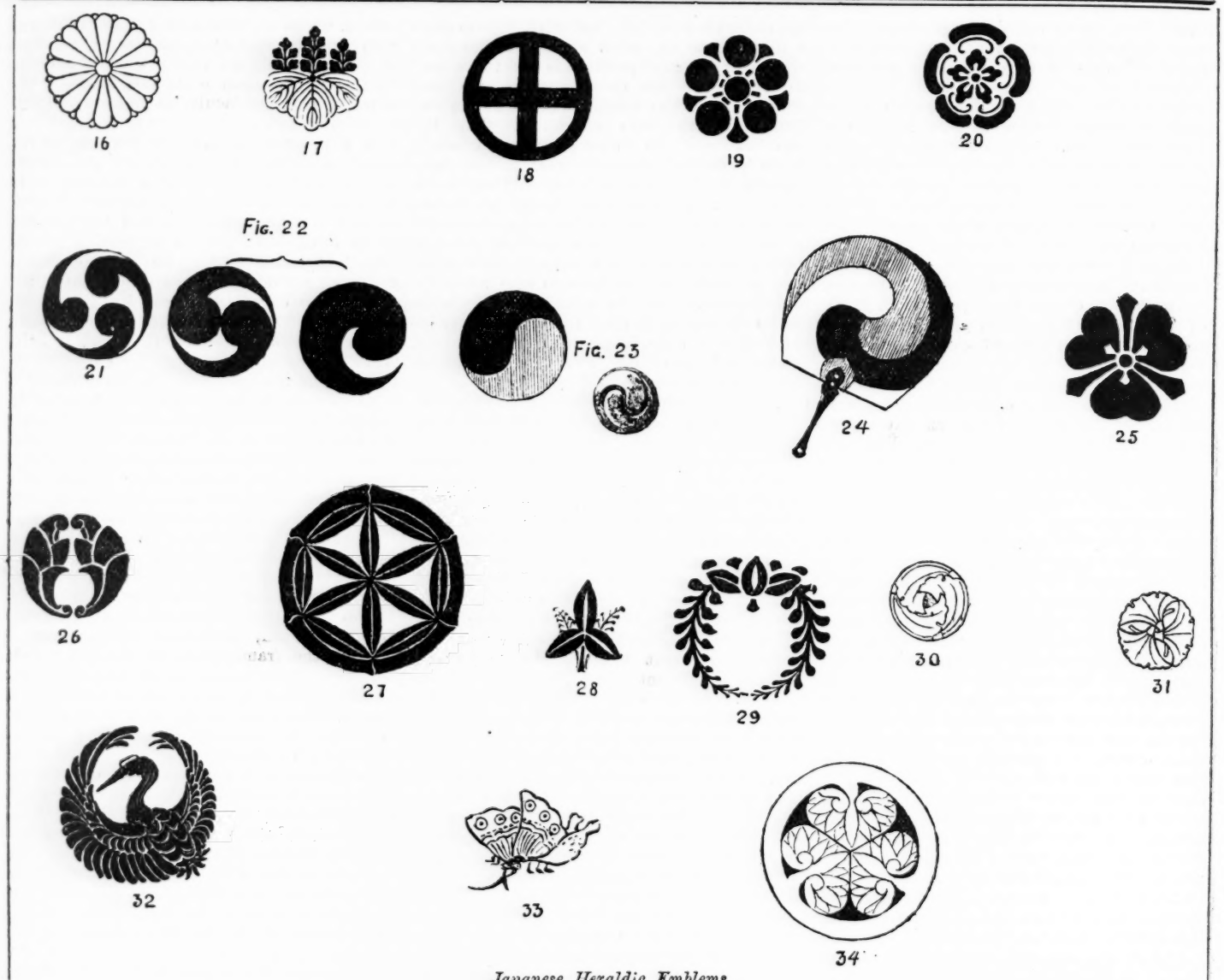
JAPANESE heraldry seems to be both indigenous to the country,—having been naturally developed by the feudal system,—and also to be quite unique. Mr. T. R. H. McClatchie, in a valuable paper on the subject, read before the Asiatic Society of Japan, has unravelled much of its history and many of its mysteries; he is of opinion that in a rudimentary form it was in use for some considerable time prior to the year A.D. 900. The scheme of it is perfectly simple, and it is based on the simplest principles of design. The device is some favourite flower, almost invariably enclosed in a circle or developed into a circle, and treated quite flat. The power of designing, the knowledge how to bend the subject to its required uses, which characterises all Japanese ornament, is in their heraldry exemplified, in an elementary manner certainly, but to a most remarkable degree.

The scheme of this article would be incomplete without some illustration of these badges; the difficulty only has been what to choose out of so great a number, because there is not a flower that blows, nor leaf that withers, but has been worn upon the battle-field, and now adorns its owner in his peaceful avocations. I have selected a few of the most characteristic, both of plain line and conventional ornament. I put first in order the Imperial chrysanthemum and paulownia (figs. 16 and 17); and next the plain bitring, the badge of the famous Prince of Satsuma (fig. 18). Fig. 19 is typical of a hundred others, which are circles of various sizes, and varying in number and arrangement, and bars of different widths. Few are so elaborate as fig. 20; it was borne in old days by one of the most powerful families in the country. Fig. 21 is the old badge of the Arita family; it is now a priestly emblem, the majority of the paper lanterns which light up the streets of Tokyo on festival nights bearing it in black or red. It is, perhaps, one of the most curious in its conception, and has puzzled many authors to give a suggestion of its origin. It may be nothing but a quaint fancy, charming not only for the arrangement of the comma-like curves with which it is formed, but also for the Manx-like space between them, the eye resting on the black and the white alternately; or it may have been taken bodily from the markings on the wings of a moth common in the country. It is called in Japanese the *mitsu-tomoyé*, or threefold *tomoyé*, the name given to the "comma" figure; and hence, as might be expected, we find a badge composed of two, and another of only one *tomoyé*, both of which are given in fig. 22. These, however, are not often seen. But as they exist, it is reasonable to infer that the origin of the *mitsu-tomoyé* must be sought in the origin of the single figure. Mr. McClatchie gives the following as current explanations:—It has been suggested by the "snow falling whirling down"; by waves dashing up and breaking against a rock; by the *tomo*, or "small leathern glove, consisting of loops for the fingers attached by thin strips of leather to a broader piece fixed on the back of the hand, as worn in ancient times by Japanese archers." To which I may add the swirl of water produced in a waterbut by a revolving stick; and hence it is used as a charm against fire by builders in Japan, the projecting tiles of the roofs of houses having almost invariably this device stamped upon them. To seize on a figure so curiously fantastic is eminently characteristic of the Japanese; in its triplicate form it has become one of the most famous of the traditional devices of old Japan.

It is impossible to pass unnoticed a figure well-known to lovers of Eastern art, which at first sight appears to have some affinity to the *tomoyé* figures. It is given in fig. 23, the first form of it being part of the recently-adopted Corean flag, the second another form taken from an old Chinese vase. The figure is known as the "Yang and the Yin," and is one of the most ancient of Chinese symbols. It signifies completeness: formerly, of the Creation as a perfect whole, representing the heaven and the earth, the man and the woman; latterly, of all created things, as representing the light and the shadow, the obverse and the reverse, the positive and the negative—"There is the Yang and the Yin in everything." "Ce signe," says M. du Sartel, in "La Porcelaine de la Chine," "symbolise la réunion des forces créatrices, le Yang et le Yin, l'une positive, male et noble; l'autre négative, ou plastique, et femelle." The circle of completeness has clearly given the almost universal circular form to the Japanese heraldic devices; and it accounts, too, for the circular plan on which many of the conventional floral ornaments are based.

I am tempted here to give, quite parenthetically, a drawing of a common Corean fan (fig. 24), on which is a curious and pleasant device, which seems to have originated from this symbol of completeness; it is painted in black, red, and a dull orange.

Figs. 25 and 26 are good samples of the rigid method of treating flowers. Fig. 27 is a curious hexagonal device of bamboo-leaves arranged in a circle of six joints of the stem. Fig. 28 is a little water plant. Fig. 29 is a charming arrangement of two sprays of wistaria blossom, and 30 and 31 of leaves of the maiden-hair tree, *Salisburia adiantifolia*. Dr. Dresser, in his interesting book on the Arts of Japan, has figured no less than ten crests composed of two or more of these leaves arranged in different ways, but each quite distinct from the others. In fig. 32 the crane, emblem of longevity, and familiar to all and any who have seen something of



Japanese Heraldic Emblems.

Japanese work, is put to heraldic uses; and in fig. 33 the butterfly, figurative in these days of the lighter life. And last, but not least, fig. 34, the trefoil of *aserum* leaves which adorned the armour of the vassals of the great Tokugawa Shoguns, which glitters now, though the dynasty has passed away with all its pride, from the roofs of a hundred shrines; which adorns more than half the lacquer boxes and the brocades which feast the eyes of the curio-hunter; which seems to pursue the traveller in Japan from end to end of his journeys, and to impress him more than anything else among the glories of the age which has departed.

Among people who have such simple but artistic devices for their badges we should expect to find some, at least, of their decorative work conceived in the same spirit; such, indeed, is the case. The lacquer utensils of the Daimio, to which I have already referred, are often covered with a profusion of rigidly conventional scroll-work, playing round the crest, which comes into the design five or six times. Sometimes the ornament flows off from the crest itself, if it lends itself to such treatment. Sprays of conventional work, for example, often flow out from the base of one of the *tomoyé* figures in the badge already described. Such scroll-work, though the rice-bowl or table is only to be used on one occasion, as in the case of things made for a wedding ceremony, is always of exquisite finish, perfect workmanship, and unfaltering ebb and flow of graceful line. This, I think, is known already; but what, I fancy, is not so widely known is that almost the whole of the profuse ornamentation of the Buddhist temples, with the exception of the panels of realistic birds, beasts, and fishes which are familiar to all who have seen Nikko, are conceived in the finest spirit of decorative art. The principle of line for line's sake is, undoubtedly, the inheritance of all Eastern Nations; but the Japanese have improved on their application of it; they have, indeed, impressed on every principle they have ever adopted their own vivid originality, the charm of their own graceful personality. Stiff, hard, matter-of-fact straight lines seem to be imbued with the national sense of humour and love of fun. They yield their rigidity into the compelling master-hand of the designer. You never weary of following the dexterous weaving of the lines, or of watching the light playing on the diapers; everywhere the freshness of the artist's mind has packed dull monotony away; here a few lines of conventional work, notwithstanding that they recur at regular intervals and are treated almost geometrically, compose a design as restless in its beauty as the sea-waves which have suggested it; and here, this oft-repeated scrollwork tells of the summer cloud from which it has borrowed its shape. Imaginativeness, suggestiveness, infinite variety everywhere; and everywhere beauty created out of nothingness. As this people are, so is their art work; it reflects both their seriousness and their whimsicality, it follows their humours from grave to gay. The grizzled guides at Nikko have pointed, since the time when occidental globe trotters were not, to one of the four white columns at Iye-yasu's shrine, on which the beautiful cloud diaper of the other three (shown in fig. 13, p. 305, *ante*) has been reversed, and they have told how this was done purposely, lest the whole structure, by being too perfect, should bring misfortune on the house of Tokugawa. It is called the *Mayake no hashira*, the evil-averting pillar (Murray's Guide). It is a pleasant myth, perhaps an interesting fact; but it is illustrative also of the humorous spirit in which they love to work.

This spirit of surprise is not unknown to the more sober West, though it does not find expression in its decoration. But it is the very life and soul of our music. Since the good old days when Purcell reigned supreme, each successive age has added to its inherited treasury of charms some new invention, some new surprise of magic power to astonish delighted ears. The mysteries of the discords have come to be unravelled one by one; custom has compelled suspensions and inversions to become part of music's nature. In poetry, too, how great is the charm of the unexpected rhyme. The common metres that we know so well have taught the ear to know when the pleasure of the rhyming sound will come. But oftentimes a magician will surprise the ear by a rhyme out of due season, and so enhance the pleasure of his song. We know the value of surprise in our music and poetry; the Japanese know it in their art. The vivacity of the nation, the sparkle of their humour, reappear continually in their decorative work, and have had much to do with the creation of their art. What the French term *chic* is one of its most noticeable features. It is alluring, it is fascinating, it is the embellishment of art; but it is not, of itself, art. It appeals to the fancy, it does not speak to the mind. And so, when we come to judge the work critically, this *chic* must be put on one side, its fascination must be resisted; and so I come back to the old standpoint. The glamour of the art, that facility which it possesses of giving momentary pleasure, is its greatest enemy, prevents the better appreciation of it, and so frustrates the end for which all art has been created. I come back to this standpoint intentionally, because much of the Japanese decorative work which has captivated us in the West, and which has left an almost indelible mark upon our own work, is not of the highest order, and depends for its effect on little else than this superficial *chic*. I hardly know what name to give it: perhaps "spray-work" will be sufficient to call it to

mind. It is, however, needless to say that in its European presentment it has lost even its one redeeming feature. But of this more hereafter.

This love of quaintness among the Japanese people, of which I have been speaking, leads to two very special and very distinct characteristics of their art. One is the irregularity with which they delight to ornament surfaces; the other, the disregard, in a certain class of work, of structural decoration. Of the first, first.

One of the chief features of successful ornament is the due arrangement of its parts on the surface ornamented. The eye must be able to travel over the surface without receiving unpleasant shocks; the surface which actually receives the ornament must be in pleasant proportion in every part of it with what remains blank, so that the whole surface, and not only certain parts of it, may appear to be decorated. The flow of gold lines, for example, on a black surface will suggest incompleteness if they leave here and there great chasms of black, or if they get unduly massed into lumps. The eye will receive no pleasure from the surface as a whole, but will rest on the spaces or the masses, and leave the remainder of the decoration unnoticed. The effect of a wall paper which has its surface unequally covered, the irritation which the frequent repetition of the blemish causes, and the annoying way in which, wherever one may look, it forces itself on the attention, is well known. In the graceful and flowing scroll-work with which the largest utensils of the Japanese are covered, how poor so ever the gold or the lacquer may be, or how feeble the actual workmanship, I think I may safely say that I have never seen the smallest piece in which the due proportion between the light and the shade of the ornament has been forgotten; nay, more, in which the success of its execution in this respect failed to make it an object of delightful interest. So, too, if a surface is covered with a diaper, you feel that the size of the pattern is exactly proportioned to the dimensions of the surface; that it is not so small as to be lost in a general survey of the object, nor so big as to force itself more prominently on the attention than the thing it ornaments. It is an emphasis, and an emphasis only, and you feel that the proportions of the one to the other are just so right as to obtain the maximum of pleasant effect, and that if the diaper were larger or smaller, even by the breadth of a hair, the beauty would be gone.

There is another style of ornament which the Japanese specially affect, and in which they triumph over the difficulties which it imposes in the way of strictly observing this principle of proportion. They delight in sprinkling surfaces with heraldic devices, or fragments and patches of design; and often in the case of a continuous design it is broken in upon here and there by imaginary cloud masses. The principle on which the artist proceeds is naturally the same in both cases. Now, there are two methods of proceeding. The one to work from the centre and arrange the patches and clouds with regularity and due order; the other is to do just the opposite. Need I say that the latter is what the Japanese do almost invariably? But there is an unsuccessful method of doing it and a successful; and again, I need scarcely say, the latter is the Japanese method. The right and the wrong of this irregularity needs some artistic acumen to appreciate, and a great deal more than we Westerns possess to practice with effect. The Japanese have it instinctively, and here I deliberately omit the word artist, for it seems inherent to the race, from the baby on its mother's back to the ever-present crooning grandmother. It matters little to a Japanese whether he has to break up a surface with one patch or with two, with three or with a hundred, he will know exactly where the one patch or the many should go to produce a charming effect. I really believe that, with some inclinings of the head, and not a few soft interjaculatory reflections, a Japanese could put a postage stamp on an envelope artistically. I have sought to avoid this word, so dreadful in its modern use, but it has slipped out unawares, and I may therefore press it into the service of explanation. When the Japanese are said to be "*so* artistic," the special quality of their work which arises from their extraordinary faculty of arrangement is usually present in the speaker's thoughts. But in this case the banality of the word may be forgiven, for it is in its truest sense true. If he has to put one poor little flower-vase on a tiny table, or to paste on to a screen a dozen of the differently-shaped poetry papers which they love so much, the result is always effective and charming; he always adopts the most subtle form of arrangement, a disorder based on order. The secret of the charm of this method is, I think, the same as the secret of the beauty of curves. If we take the conic sections, we find them increasing in beauty in their natural order of circle, ellipse, parabola, hyperbola; and then we get to those wondrous and complex curves whose equations worried and tormented our undergraduate days. The fascination which a simple line exercises over the brain seems in some way to be connected with the intellectual pleasure which it excites. If one analyses this pleasure further, it seems to be a negative, the pleasure of not knowing; afterwards, when curiosity sets in, this pleasure seems to give way to another intellectual pleasure,—that of finding out; but this leads to a certain cerebral excitement, and is subversive of the repose which is essential to what we call beauty. The way a curve speaks to the mind (even to the Classical mind, which abhors the mathematician and all his methodical ways), is through its equation, which is, in fact, the concise statement of the continuous proportion of its two dimensions: the x and the y which are enshrined in boyhood's algebraic reminiscences. As this proportion increases in subtlety, so our delight in the curve which results from it seems to increase. There are, indeed, three degrees of pleasure which lines give rise to. The pleasure of knowledge first, as of the proportion of a circle; but this appears to be of a very low order, and sometimes almost approaches contempt. Without some relief, the mind seems to dismiss it at once, not caring much to dwell upon it. It knows at once how that effect is produced. And so of an ellipse, when the proportion of its axes is patent. Secondly, there is the pleasure of not knowing and the satisfaction of not wanting to know, which rises to its height, when there is also a suggestion of the infinite. And lastly, there is the pleasure of seeking giving rise to the excitement of discovery, or the vexation of defeat. Some such intellectual processes seem to be the origin of the effects which we know by the names of commonplace, beautiful, eccentric. But as between beauty and eccentricity what the ratios actually are which produce the one and the other, it is impossible to determine; nor would it be very comforting to reduce the whole matter to figures and rules. The suggestion of the cause must suffice. But the cause which lies at the foundation of the pleasure in curved lines seems also to account for the pleasure in artistic arrangement. A vase set in the middle of a table is commonplace: it divides the surface into two equal parts. If we wish the mind to be concentrated on the vase, the *juste milieu* is the best place for it. But if it is to be an ornament to the surface on which it rests, the proportion between the two parts of the surface must be subtle and undefined, and yet not so extreme as to excite any curiosity about the matter. If it divides the table into one quarter and three quarters, the effect will be as commonplace as if it stands in the middle. If it stands so that one part is on one side and ninety-nine parts on the other side, the effect will be curious; but the Japanese will know, not the one spot, but the hundred spots on which it may stand, so that the eye may rest on table and vase together and be satisfied. Arrangement is a study specially cultivated by every Japanese in his every-day life. The gardener setting out trees in a garden, your "boy" arranging flowers for the table, the maiden settling gewgaws in her raven tresses, the painter daubing colour on the commonest fan, all alike know the virtue and practise it. You cannot live a week in Japan without noticing how deeply rooted this faculty is in the instincts of the people.

Suppose I were to take an English paper-hanger of average intelligence and skill, and were to give him a white screen, and the following pieces of coloured paper to be pasted on it: one in the shape of a fan without the sticks, and five strips about 2 in. by 7 in., or three fan shapes and four strips, or any number of fan shapes and any number of strips. What would the result be? "Not in my line, Sir," probably. But it is in the "line" of every Japanese; and not a house in all Japan but has some screen or sliding paper panel ornamented in this way, the scraps of paper bearing some pleasant fragments of poetry. I do not know that my writing conveys any idea of the effect of these "things of scraps and patches"; but my word must be taken for it, that they delight not the Japanese alone, but in a very short time the dull eyes of their Western visitors too.

We wish to learn the secret, but though the hands are willing our dullard spirit often proves very very weak; some of us coming home think it truly Japanese to set our pictures in their frames all "cock-eye," as though, forsooth, the picture were the ornament to the frame, and not the frame the setting to the picture. Once upon a time, not so very long ago, a certain British artist went across the seas to study the little people who dwell in the far off islands of the sun; and having stayed among them for a full year he came back to his native land enraptured. And he made an exhibition of pretty drawings, and charmed all London town with sprightly sketches of the little maids of that distant Arcadia. He might have decked the walls of his gallery like the Japanese deck their screens and walls, but—this in the friendliest of protest—he might have spared himself and us so horrid a caricature of Japanese art principles as his skew-framed pictures. It was a grotesque of the most cruel type; the art it professed to adopt was nowhere to be recognised.

The second special characteristic to which I have referred is a more difficult one to deal with; it is, as I have said, the complete disregard, in a certain branch of Japanese decorative art, of the structural principle in design. This seems to have been considered by Western designers as the leading characteristic of the art; the pots, and pans, and plates which they ornament with sprays of flowers and fruits, coming from nowhere in particular and sprawling everywhere in general, are supposed to bear the impress of Japanese art in its highest state of perfection. There is no doubt that much Japanese work, and work, too, of a very high order, is in this style; and I must confess that it has always puzzled me to find a satisfactory explanation of it. The difficulty is increased when one finds that the Japanese do not only admit the structural principle, but in the practice of it have carried it to a great pitch of perfection.

I am anxious in these articles to avoid discussing fundamental principles at any length. This rule, however,—which by an eminent architect has been expressed shortly in the following way: "Decorate construction, never construct decoration,"—is far too important a one to pass altogether without notice. To ornament an object which is complete in itself in such a manner as to make it appear incomplete; to make what is a whole appear only to be a part, has always been admitted to be a fundamental mistake; to make the ornament fit the surface ornamented, to make it emphasize its completeness, has always been considered one of the highest aims of the art. Anything short of this appears to be only a case of square pegs and round holes.

But I think that this very characteristic branch of Japanese art is founded altogether on another principle, and that in its truest form it lies outside of the domain of decora-

tive art. I do not say this merely to simplify the explanation, on the plan of excluding from recognition whatever does not exactly tally with pet theories. If we find the Japanese generally ignoring the structural principle, if we find them unique among Eastern decorators in deliberately adopting an exactly opposite principle; if, in addition, we are compelled, willy-nilly, to admit that the effect was not distressing to the eye, but the very reverse, then we should be forced to reconsider the old position, to see if the old hobby is still sound. The new art would perhaps show, after all, that there was a flaw somewhere in the process of reasoning which had deduced this principle from the observation of so many instances of its application among the long-known arts of so many people.

Again, it may be said, even if I am right in asserting that the structural principle is recognised by Japanese artists, that the observations which I have endeavoured to illustrate in these articles have been made exclusively in the Buddhist temples; that the art there practised is essentially a derived art; that it has come with the religion through China from India; and that therefore it proves nothing as to the real nature of Japanese art. But even if we were to exclude all the Temple decoration from our study, and treat the residuum alone as indigenous art, when we come to lacquer ornament I find that there also the structural principle is faithfully adhered to. Indeed I believe that the further the examination is carried the deeper we shall find this principle embedded, and the greater therefore the necessity of finding the true explanation of the non-structural work of which we are now speaking.

The secret, I think, is that this non-structural work is essentially representative: it belongs properly to the pictorial art of Japan. The most rigorous of decorators would never deny that the pictorial art may very rightly be applied to the purposes of decoration: but he would insist that if it is so applied it must conform to the principles of that art, and must be judged by its standards. No technical difficulties can be allowed to stand in the way of its approach to excellence, can be admitted as excuses for an inferior execution or for an absence of the vitality which pictorial art demands. If I paint a landscape on a potter's vessel I shall not be forgiven its crudity, its absence of depth and light: nor, if it be a human face, its vacuity, simply because of the difficulty which my materials set in my way. The work is admittedly difficult, it is not necessary to be undertaken: but because I attempt it, I cannot insist that my art finds legitimate expresion is a lower range of feeling. If it is essential to my happiness to cover my walls with roses and ribbons, and my ceilings with chubby cupids and all the winged hierarchy of celestial space, I may do so, and infringe no real or imaginary law. But the cost, if the work is the work of men's hands, or the impossibility of good results if it is "processed," will not be an answer to kind friends who, after their manner, tell me that the variegated patches are hideous and mere nothingness, or that the contortions of the little cherubs sitting up aloft are anatomically impossible. Decorative art in its lowest form supplies the means of obviating those terrible productions in which our forefathers of a certain age not so long past seem to have delighted. F. T. P.

NOTES.

THE Royal Institute of British Architects will hold its first general meeting for Session 1891–92 on Monday evening next, November 2, when the President, Mr. J. Macvicar Anderson, will deliver the opening address. The first business meeting of the Session, when a ballot for new members will take place, will be held on Monday, November 16. The last day for receiving notices of any questions for discussion at that meeting is the 31st inst. The following arrangements have been made for general meetings during the Session 1891–92:—

November 16.* — Alliance of non-Metropolitan Society; Ballot for New Members; Modern Egyptian Buildings. By Mr. H. Favarger, of Cairo.

November 30.—Sculpture and Sculptors' Methods. Under the management of the Art Standing Committee.

December 14. — American Theatres. By Mr. Horace Townsend, of New York.

January 18, 1892.*—Ballot for New Members; Award of Prizes and Studentships.

January 25.—Presidential Address to Students. By J. Macvicar Anderson, President; Presentation of Prizes.

February 8.—Revision of the Building Acts of the Metropolis. Under the management of the Practice Standing Committee.

February 22.—Stained Glass. Under the management of the Art Standing Committee.

March 7.*—Election of a Royal Gold Medallist: Ballot for new members.

March 21.—Byzantine Art. By Professor Aitchison, A.R.A., Vice-President.

April 4.—Wrought-Ironwork: the Renaissance Period. By Mr. J. Starkie Gardner.

May 2.—Report of Council: Appointment of Scrutineers for the election of new Council, &c.

May 16.—The 1891 Congress of Hygiene and Demography. Under the management of the Science Standing Committee.

May 30.—Castings in Metal. Under the management of the Art Standing Committee.

June 13.*—Election of Council; Ballot for new members.

June 27.—Presidential Address on Presenting the Royal Gold Medal.

THE Midland Railway Company are at last being more fully imitated by their old rivals, the Great Northern, in the reduction of classes, the latter company having announced that from the 1st of November they will totally abolish the second class on their system,—with a few exceptions, which include the metropolitan and suburban stations as far as Hatfield. Both the Great Northern and the Manchester, Sheffield, and Lincolnshire Companies have for some little time past ceased to carry second-class passengers on certain portions of their respective systems, a similar policy being adopted by the Glasgow and South-Western and the City of Glasgow Union lines early in 1889. The per-centage of second-class passengers is very much smaller than it was when the Midland startled the travelling public by their daring innovation seventeen years ago. The proportion was then about 20 per cent. of the whole, while,—on the northern lines, at least,—it has now fallen to considerably less than half this figure. The abolition of this class will thus affect but a small proportion of the company's passengers, while it will simplify both accommodation and "booking." It has been remarked that the Midland plan is conducive to punctuality, inasmuch as by the use of two classes instead of three time is saved in making up the trains, there is a saving in rolling-stock, and a general simplification in all the working arrangements. This makes it all the more remarkable that the experiment should have to stand the test so many years before being fully adopted by either of the rival trunk lines. Probably nothing in the way of railway reform provoked so much hostile criticism as did this action of the Midland directors. Many of the Midland shareholders themselves were alarmed, and indignation meetings were held, at which resolutions were passed condemning the action of the Board. It was even gravely suggested that the powers of the then newly-formed Railway Commission should be invoked to resist the movement. The dissentients, however, were in the minority, the directors possessing the unlimited and well-merited confidence of the bulk of the proprietors. With whom, by the way, did the idea of abolishing the second-class actually originate? The Midland Board took this step on January 1, 1875, but the late Mr. Joseph Parsloe quotes a letter bearing on the subject, written in August, 1874, in which the following passage occurs:—"With moderation of fares, I join in my own mind another change, viz.,—the substitution of two classes of passengers for three."* This was addressed to the Chairman of the Metropolitan Railway, and was written by Mr. Gladstone; and Mr. Parsloe remarks that at that time the carrying out of such a proposal appeared very remote.

IT is satisfactory that a practical attempt is to be made to obtain the opening of Lincoln's-Inn-fields to the public. A committee propose to bring forward a Bill in Parliament next session to attain this object. An effort such as this is better than any amount of letters to the *Times*. Those who oppose this necessary change will then have to show why, if compensation is given to any interest which may be injured by the opening, such a Bill should not become law. We wish every success to those who are endeavouring to procure a great boon for the poorer inhabitants of the crowded districts around Lincoln's-Inn-fields,—a boon which can be no injury to the business men of the locality.

THE case of "Matthews *v.* the Mayor, Aldermen, and Burgesses of Barrow-in-Furness," heard before Mr. Justice Smith at the Liverpool Assizes, is an important one for Corporations to note. The plaintiff brought an action to recover compensation by reason of the defendants' neglect in the management of their sewers, whereby his houses had been flooded and he sustained damage. The substance of the complaint was that in a storm the sewer overflowed and flooded his property, and the charge against the Corporation was that the pumps at the pumping-station were not kept going as they should have been. It appears that Barrow-in-Furness has a separate system for storm-water and sewage, but this is not complete, and the storm-water in this case obtained access to the sewage-pipes, which of course were perfectly inadequate to carry it. The argument was that if the pumps from the low to the high level had been worked to their full power the amount of sewage would have been carried off fast enough to prevent any disaster, and evidence was given that the pumps were not working that night or morning, in which case, of course, the sewage was practically in the state of a pond getting filled to overflowing. The authorities practically admitted the failure of duty by dismissing a man who had been in charge of the pumping-engine. Judgment was, therefore, given for the plaintiff, and the same judgment was accepted for other similar claims; damages to be settled. In connexion with this case we may draw attention to the remark made by the Surveyor to the Fulham Vestry, quoted in our first article, to the effect that the cases of cellar flooding in the district "seem to point to a deficiency of pumping power at the Victoria pumping station."

IN its issue of last Friday the *Yorkshire Post* contained a trenchant article of more than six columns, entitled "Indictment of the Leeds Corporation." We have no sympathy with the chief motive which influenced the writer of the article; he candidly admitted that he wrote "in view of the municipal elections" now close at hand, and the article, in fact, partakes of the nature of an electioneering squib, let off for the purpose of damaging the opposing political party. The indictment may be summarised thus: The death-rate in Leeds is one or two per 1,000 more than the

* The four meetings thus marked are business meetings.

* "Our Railways," p. 155.

average in the twenty-eight large towns, and this high rate is caused by the excessive mortality in certain portions of the town (estimated, indeed, at 48 per 1,000 for the first half of this year), which, in turn, is the result (1) of the refusal of the Corporation to deal with insanitary areas, (2) of the parsimony which prevails in the scavenging department, (3) of the refusal of Leeds (alone among the twenty-eight large towns) to adopt the compulsory notification of infectious diseases, and (4) of the vile effluvia arising from "the stream of unutterable filth that passes through the borough and is called a river." It is also stated "that there is no greater nuisance in all Leeds to-day in the form of a building than is the Town Hall," and that about one-half of the sewage of the borough is passed into the Aire without any treatment whatsoever. A formidable indictment even so far. But Leeds is the arch-offender also in the erection of back-to-back houses. It is said that of the 370,000 inhabitants of Leeds, 214,000 are occupying back-to-back houses, and during the municipal year 1889-90 no less than 1,200 such houses were built. Unfortunately for the writer in the *Yorkshire Post*, another political party in the borough has recently begun a crusade against back-to-back houses, and the writer in question, sacrificing the public good for party considerations, becomes an apologist for that class of dwellings, which all sanitarians nowadays unite in condemning. "What is the evil," he asks, "if it be necessarily an evil, of back-to-back houses, compared to the fetid overcrowded slums?" &c. Again, "there may be back-to-back houses *good*, bad, and indifferent." Thus, the health of the inhabitants of the town is to be played with in the interests of political parties. Why cannot people see the higher wisdom and morality of discussing sanitary questions in a scientific rather than in a political spirit?

A JAPANESE physicist, Dr. J. Takayama, has been investigating the properties of decomposed granite sand as applied to building purposes as a mortar. Large quantities of this decomposed granite are found in Japan, and, when mixed with slaked lime, become as hard as European puzzolana and trass. The finest portion of the sand forms a fine, yellowish powder, in appearance like china clay of good quality, and, when mixed with lime, it hardened like natural volcanic tufa. The percentage of silica varied between 44 and 53. The finer portions were easily dissolved with hydrochloric acid. Dr. Takayama attributes the hardening with lime to the formation of aluminates and silicates of lime. A mixture of 10 parts of slaked lime to 100 parts of sand was found to give, on the whole, the highest tensile strength. Briquettes made with that mixture, after two weeks' exposure to the air, gave a strength of 56·89 lbs. per square inch, and by fifteen weeks' exposure the strength was raised to 85·76 lbs. per square inch. The same mixture gave the best results when the test specimens were placed in water during hardening, the tensile strength being 7·54 lbs. per square inch after two weeks, and 111·65 lbs. per square inch after fifteen weeks. One specimen, however, consisting of 100 parts of slaked lime and 100 parts of sand, had a tensile strength after twelve weeks of 119 lbs. per square inch, but the strength declined during the next three weeks. This lime mortar would not stand immersion in salt water, the author attributing the fact to the solvent action of the magnesium salts present in salt water. When the surface of the briquettes was smooth all the mixtures resisted the action of frost except the one containing the smallest amount of lime,—*i.e.*, 3·41 lime to 100 sand,—but when the surface was roughened by scratching, the 10 to 100 mixture was the only one not acted upon, although frozen and thawed five times.

AN account is given in *Le Génie Civil* of the now well-known Paris Testing Laboratory for Materials, which, from a very unpretentious beginning, has grown into an establishment making 30,000 tests a year. The germ of the establishment was a grant of 450 f., made in 1867 by the Administration des Ponts et Chaussées, for the purpose of making tests of contractors' material. The laboratory was first placed in a disused kitchen of the Octroi Office; at the present time it consists of a special building forming three sides of a square. On the ground-floor are the apparatus for testing paving material, the motive-power being supplied by a gas-engine; adjoining is the hydraulic press, working to 150 tons per square inch, used for compression tests. In the basement are the appliances for preparing briquettes, and the immersion tanks. The apparatus for testing stone sets consists of a rotating horizontal disc of cast-iron, against which the sample is placed, and a certain gauged pressure put upon it, and the volume worn away is compared with that of a certain standard piece of material which is operated upon at the same time. Stone is also tested for durability in a machine which may be described as a species of rumbler, it consisting of two cylinders rotating round a common centre line to which their axes are oblique. Here, again, the comparison is made with stone of a standard quality treated in the same way. Tests and analyses of lime mortars, cements, asphalte, metals, &c., are also made. The details of the tests made are published quarterly, and lists of makers are given, so that contractors have every inducement to do the best they can. The advantage to Paris of this laboratory is very great. At one time very little if any cement was made in France, but owing to the work done by the laboratory, in the way of tests and analyses, so much has been learned that the cement industry has been firmly established.

THE British Association system of units and their derivatives, the practical units, the standards of which have just been defined by the Board of Trade Electrical Standards Committee, are not good enough for Mr. Oliver Heaviside. He seriously proposes in the *Electrician* that they shall be discarded in favour of a new system of his own, which he modestly terms "rational units." The purpose of this enormous change, involving—which would be the least of its drawbacks—an expenditure of thousands of pounds, in re-winding resistances and re-graduating meters of all kinds, is to save some of Mr. Heaviside's friends the trouble of multiplying by 4π; and to convince the electrical world, at least, that a greater than Maxwell is here. It is not possible within the space of a note to discuss the reasons that the author of this scheme gives for his wholesale condemnation of a system which has been carefully elaborated by some of the greatest electricians of the age. We will only hint that when he has effected this reform he would do well to turn his attention to physical astronomy. Astronomers, since Newton's time, have been in the habit of using a system even more open to his criticisms; and the reform of the Nautical Almanac and re-statement of all astronomical tables and formulæ would be a task fitted to occupy Mr. Heaviside's leisure for the term of his natural life.

LONDON is, apparently, really to have its Eiffel Tower. The public, or rather the shareholders in Sir Edward Watkin's railways, have been invited to take £1 shares, of which only two shillings per share is required on application and allotment. The company is entitled "the Metropolitan Tower Construction Company," and it is to take over the 124 acres at Wembley Park, on the Metropolitan line, which have already been partially laid out, and also the foundations of the tower, the vendors being a preliminary company called the Tower Company. That some persons may prefer to be carried up a high tower and there hear concerts and drink tea is very possible; and the more comparatively open-air places of amusement there are for Londoners the better. But it is most questionable whether the Londoner will go out as far as Wembley; he likes to have his amusements brought to him. The Alexandra Palace was a failure, the Crystal Palace does little more than exist. Mr. Barnum did not make a fortune by pitching his circus in Hammersmith. It is very doubtful, therefore, whether Sir Edward Watkin will earn a dividend by his tower for his shareholders.

THE London County Council, we find, are laying out a plot of waste land south-east of their Parliament-hill recreation-ground, and near to Gospel Oak at the foot of Highgate-rise. Having lately belonged to the New River Company, who tried to sink an artesian well there, it was marked for sale for building purposes; but will be added to the open space between Highgate and Hampstead. On November 3 will be offered, in thirteen lots, at the Mart, the late Mr. G. W. Alexander's estate, Stoke Newington. This property includes the "Willows," and "Warwick House," overlooking Clissold Park, together with about ten acres along Paradise-row, and Thistleton House with its gardens and pleasure-grounds. It has been suggested that the "Willows" would form a convenient building for the projected public library, and that the estate, which has some good trees, might be added to the adjoining Clissold Park, as lately devoted to public enjoyment.* The Greenwich Vestry have forwarded to the Office of Works their petition that the Park may be enlarged by the throwing open to the public the six or seven acres that are set aside for the deer. The Vestry represent that the deer in the Wilderness are greatly reduced in numbers, are no longer tame, and "are so seldom seen that they have ceased to be an attraction." We also read that the London County Council have entered upon negotiations for purchase of the land adjoining Peckham-rye, towards which (about 51,300*l.* being required in all) they have voted 18,000*l.*, the Charity Commissioners 12,000*l.*, the Camberwell Vestry 20,000*l.*, the Lambeth Vestry 500*l.*, and the St. George's (Southwark) and Newington Vestries 250*l.* apiece. The land in question, lying near to Rye-hill, consists of about 52 acres, being the Homestall Farm, which, it has been stated, the freeholders are willing to sell, whilst reserving to themselves for awhile a lease of the farm, a pottery, and two tenements, at an annual rent of 525*l.*

IT has generally been supposed that Frederick the Great of Prussia had all the accounts pertaining to the erection of his numerous palaces at Potsdam destroyed, with the idea of preventing any authentic information as to their cost appearing in history. Although an order to this effect is said to have been given by him, it appears that it was not obeyed, as the accounts have been found in an underground cellar of one of the palaces. They have been sorted, and some interesting extracts made. According to these extracts, two million marks in money were spent on the renovation of the old city palace, this sum not including the cost of interior fittings. About 8,640,000 marks were spent on the erection of the so-called New Palace. The laying out of the grounds at Sans-souci cost over a million marks; the summer-houses, grottos, &c., in the grounds two millions more. The Sans-souci Palace itself only cost a little over one million marks, the waterworks 500,000 marks, the Belvedere 400,000, and the stables 46,000, in all, up to the year 1756, some 15,000,000 marks in coin. This sum must, however, be doubled to give a correct idea of the actual cost, as a great amount of free labour was done on the works, no carriage ever paid for, and all the wood used given gratis. Thirty millions of marks was an enormous sum for Prussia at the time, and its modern money value would, of course, be far beyond that.

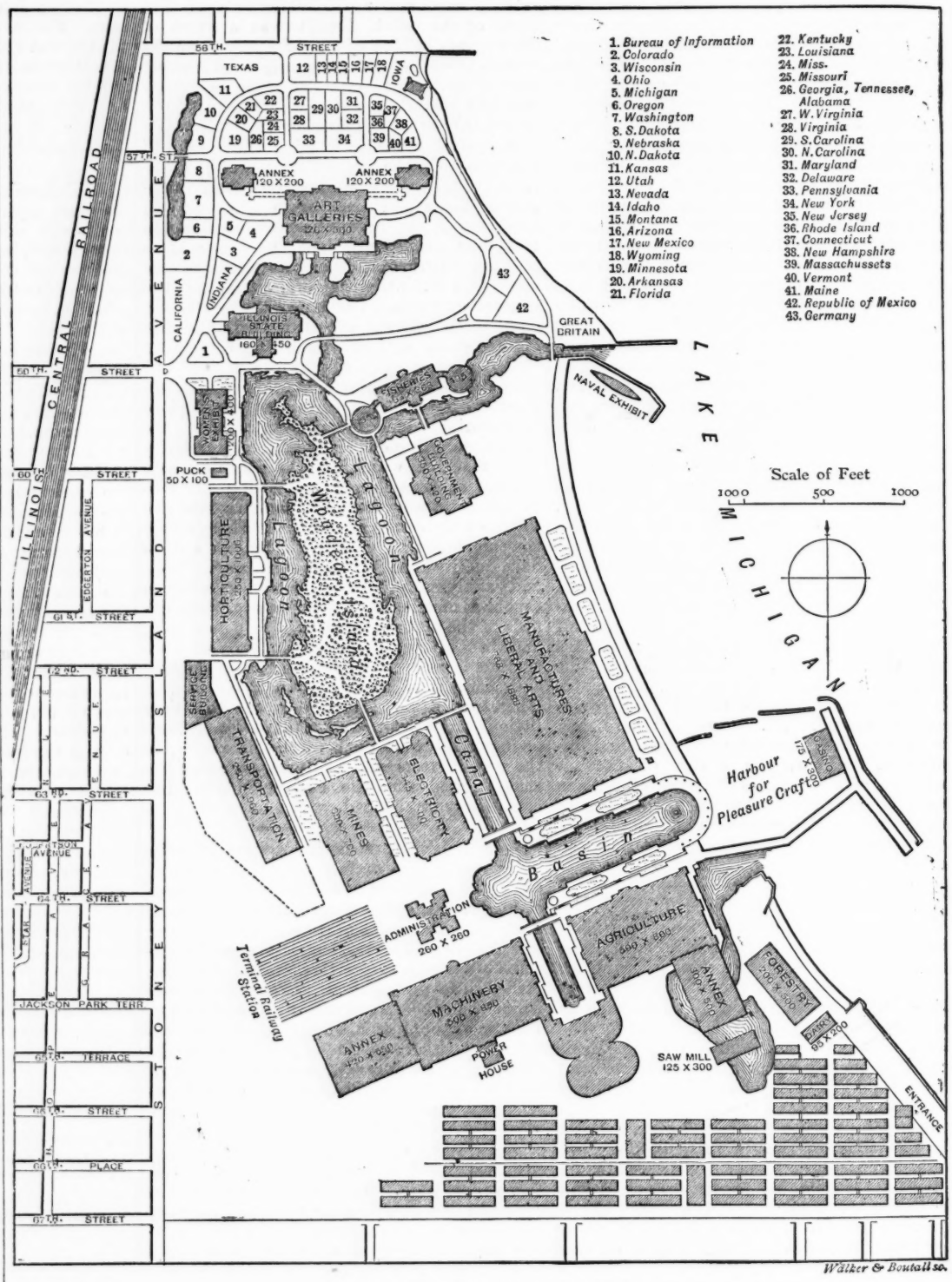
FROM some correspondence we have received between the Clerk to the Northfleet School Board and a firm of architects

* See the *Builder* of Feb. 26, 1887, and Aug. 3, 1889.

intending to compete, it appears that for the fifteen guineas offered by the Board in their advertisement in our columns they expect to have full possession of plans for a school for 500 children; they decline to give any information as to whether the selected architect would be employed on the work, and on what terms; and they will appoint no assessor. If any architects send in plans after this it is their own fault if they are victimised.

A CORRESPONDENT sends us a copy of the arrangement of the inscription tablet put up in the entrance vestibule of the new Portsmouth Town-hall, as an example of the manner in which architects are honoured in this country. The names of the Building Committee to whom "the superintendence of the erection was entrusted" occupy the centre of the tablet, with their affixes of "Councillor" and "J.P." duly recorded, and in a corner below is the notification that the architects were Messrs. Hill, Son, & Bevis. The facts we believe are that the late Mr. Hill (the architect of the Bolton Town-hall) made the whole design for the Portsmouth Town-hall, and that the building was externally nearly completed at the time of his death, after which his son and Mr. Bevis, a local architect, were appointed conjointly to complete the execution of the work. It might have been thought that the death of the architect during the progress of the work, and the real part which he took in its design, might have been worth recording; and as the members of the Building Committee (whose office was probably chiefly ornamental) were so careful to blazon their official cognizances, they might have mentioned that their architect was a Fellow of the Institute of Architects. But Corporation authorities are so bent on blazoning themselves on such occasions that it appears as if they thought they were the real designers of the building. Their deceased architect may be considered fortunate if he gets his bare name smuggled into some modest corner of the glorification-tablet.

AS Mr. Nevill implied in his letter last week, the Society for the Preservation of Ancient Buildings might do much more good if it could manage to be more reasonable in its views and less solemnly priggish and "superior" in its manner of expressing them. We have given space,—far too much space,—to a long letter from the secretary in another column, all of which might have been expressed in a few words and without the absurd tone of solemnity and moral grandeur adopted in it. On looking at the work being done at Gray's Inn Hall we are inclined to think that the Society are in the right. It was a mistake to cement it, but it is perfectly true that the stonework has been hacked and damaged, and the appearance of the whole building will be very raw when all this skinning is done; and on the whole we think it had better have been accepted as a cemented building and treated accordingly. It is the misfortune of the Society in question, however, that they cannot even be right without making themselves ridiculous.



PLAN OF THE CHICAGO EXHIBITION.

Reprinted (by permission) from the Plan accompanying Sir Henry Wood's Report published in the Society of Arts "Journal."

PLAN OF CHICAGO EXHIBITION.

THIS plan is printed from the block accompanying Sir Henry Wood's report in the last number of the *Society of Arts Journal*, which has been kindly lent to us by the Secretary. Jackson Park, about six miles from the centre of the city, which has been laid out for the Exhibition, constitutes, it will be seen, a magnificent site on the shore of Lake Michigan. The large decorative basin within the exhibition grounds will be in actual connexion with the lake, but separated from it to appearance by an architectural screen. At the inner or upper end of the basin will be a monumental fountain emblematical of the Republic. This is quite in the manner of France; but who is going to provide the sculptors to match the French work? We fear America cannot.

COMPETITIONS.

THE NEWINGTON PUBLIC LIBRARY.—The *South London Press* says that the Library Commissioners of Newington have, on the award of their referee (Mr. Rowland Plumbe), given the first premium for their new library to Messrs. I'Anson & Son; the second premium to Mr. Sidney R. J. Smith; and the third premium to Mr. J. Bull (all of London).

CONSERVATIVE CLUB, ABERDARE. — The design prepared by Mr. James Crombie, A.R.I.B.A., Brixton, for a new Conservative Club at Aberdare, South Wales, has been placed first, and he has been instructed to carry out the work.

RAIL COMPETITION FOR THE SWEDISH STATE RAILWAYS.—Tenders were recently issued for the delivery of 9,000 tons of steel rails for the Swedish State railways, when the lowest, which was accepted, was that of Messrs. Cammell & Co., of Workington, at 4*l.* 6s.; the highest being that of the Krupp works, at 5*l.* 6s. per ton. Hitherto the rails required by the State have been supplied by native works, although the price was higher than the first quoted.

THE ARCHITECTURAL ASSOCIATION:

THE PRESIDENT'S ADDRESS.*

To return to our Classes. It may seem full early to think of another step forward, and it is not with any hope that it will be possible to undertake anything more for some time to come that I venture to make a suggestion, but only that it may be borne in mind if ever opportunity should allow of its being acted upon. The step I refer to is the addition of a little workshop-practice to our curriculum. I have mentioned before the theory that an architect's training should be mainly in the workshop, or, as those who have recently advocated the system put it, that the architect should be trained as a craftsman rather than as a professional man. This view is no new one, but the support which it is just now receiving in some quarters is exceptionally strong, and because we do not at once accept it, one or two gentlemen have declared, if I do not misunderstand them, that they will have nothing to do with us. There can be no doubt whatever that those who are so enthusiastic in this matter have this much right on their side, that it is of the greatest consequence that an architect, among other acquirements, should have a thorough knowledge of his materials, and of how they are or can be dealt with; but I think a great mistake is made when it is supposed that this necessary knowledge can only be acquired by bringing up an architect mainly as a craftsman himself.

I fancy I see, too, in such a system, a great danger of narrowing the thoughts and ambitions of our students, and of further exaggerating the faults which are already too apparent in our architecture,—I mean the sacrifice of breadth and largeness of conception to mere littlenesses and prettinesses. The attention which we have for the last fifty years given to detail, first to mouldings, then to decoration, then to furniture and wall-papers, and fittings and pretty bits of all sorts, have made many architects among us equal, if not superior, to the architects of any other age in these matters. Those, and they are many, who have such skill are in the right in being proud of it; but we must not act or even talk as if skill in designing a sideboard or a wall-paper, a finial or a window-fastening, were the chief thing to be aimed at in an architect's training. An architect's first thought, his best work, must be given to his building as a whole; he must learn to grasp all the larger artistic and other problems presented by it, and deal with them in a large and comprehensive way, treating details as incidents, with all the care that their importance in the design entitles them to, but on no account giving them the first thought or greatest consideration.

I have been led into a digression by the suggestion which occurred to me that some day we ought to give our students the opportunity of a little workshop practice, say, at least, in joinery and metal work, not with any idea of making them skilled mechanics, but to show them, in the most practical way, how wood and various metals can be dealt with. At present we have no time, no accommodation, and no money for this branch, but if some day we can appropriate two or three hours a week in the afternoons to our classes, and if money can be found, I think we should do well to remember the workshops.

As regards day classes, the claims of which were rather strongly urged at one time, they have not been forgotten; but the practical difficulties in the way, and especially the expectation that the evening classes alone would at first tax all our powers of organisation and management, have led to their omission from our present programme. Meanwhile, the Studio, as a beginning, is to be open all day, and some few students have already intimated their intention to use it, either every day, or on certain days in the week.

Besides the financial help already promised, there are two ways in which I think that the Institute might possibly be able to assist us very materially, at the present moment, to make our new classes useful and popular, if they were asked to do so. The first is this: you will notice that, although the Institute examinations are held in March and November, our course finishes at the end of May; this we cannot very well help; we can neither very well begin our work two months earlier, nor can we get it into six months instead of eight; I do not know if there is any especial reason for holding the examinations in the months named, but if there is not, or if any difficulty in the way of a change could be overcome, it would obviously be a great advantage if the date of one or both examinations could be altered so that one should fall in June, after the conclusion of our course. I have heard already of cases in which students preparing for the examinations have felt unable to join our classes because their studies would not be finished by March, and they cannot afford to be kept waiting for five or six months, till November. The other way in which the Institute could help us, would be by a declaration that, up to and including the first qualifying examination for the Associateship after the end of May, 1893, candidates for that examination would not be required to have passed the intermediate examination. I believe, from what I have heard, that students who have not yet passed the intermediate examination have been, up to the present, deterred from taking our third year course by the fear that the qualifying examination would be closed against them before the end of their two years' study with us. I think we should do well to approach the Institute with a view to finding out if these two matters could be arranged as I have suggested.

I would ask our new lecturers and instructors and students to remember that they are in a sense pioneers; that their zeal, their industry, and their conduct will form precedents for the zeal, the industry, and the conduct of their successors, and on their success or failure in achieving what they attempt will, in no small degree, depend the success or failure of the Architectural Association in the future. I beseech them to bear this in mind throughout the year, and to let it act as an additional spur to their exertions.

I believe I should fail in my duty to those of you who are on the threshold of the architectural profession if I failed to repeat the warning so often given on these occasions by asking each of you to consider well before you go too far, and to turn back, if necessary, before it is too late. I can scarcely hope in the time at my disposal to prove it to you, but you must take my word for the fact that, with most men, architecture as a profession has far more attraction for the romantic ambitions of youth than for the soberer sense of middle age; I ask you to remember this, and to make allowances to yourselves for it, before you finally decide upon going forward. If you have the artist's love for art, or his pride in the creations of his own imagination, and, to gratify this feeling, are satisfied to lead a life of self-denial, and of incessant labour and worry, and frequent disappointment, you will, if you are moderately successful, find the life of an architect not only a bearable but a happy one. But if you wish for fortune or for public fame, believe me, you can win neither among us.

If you are determined to go forward, remember the saying of the Hebrew king,—"Whatsoever thy hand findeth to do, do it with thy might." If you will be an architect, make up your mind, both for your own sake, and for the sake of architecture, to be a good one. Do not trouble yourself with unnecessary conundrums as to whether architecture is an art or a profession; do not dub yourself either an "artistic man" or a "practical man"; but be satisfied to be merely an architect, armed at all points, able to devise a building beautiful to the eye, and adapted in all ways to the purpose for which it is required, and equally able to get that building erected with the materials and workmanship best adapted to the circumstances of the case, and without its costing more, or taking longer to build, than it should do. Before you can do all this you have years of hard study before you. You have your eye, your mind, and even your hand to train. You have a number of facts to assimilate, and, probably, certain habits to form, without which you would almost certainly get into difficulties that would overwhelm you. I do not tell you this to discourage you, but only to show you the necessity for constant application.

Begin by devoting a considerable amount of your time to learning to draw well and rapidly, not only with the aid of a drawing-board and T square, but, also, and perhaps especially, without any other aid than a piece of paper and a pencil. Drawing is more necessary to an architect than Latin is to a lawyer; it is the language in which he can most readily express his ideas and record his impressions, and until you have obtained the mastery of your pencil, you will find several of the most delightful and useful avenues of study closed to you. At the same time, do not forget that, for you, drawing is only a means to an end, and not the end itself; do not let the pleasure you will find in the use of your pencil lead you to be satisfied to spend your time in making pretty drawings merely for their own sake, or you will, instead of becoming an architect, be in danger of becoming a mere draughtsman. Meanwhile, cultivate your sease of the beautiful by as frequent a contemplation of beautiful objects — especially architectural objects—as you can compass; do not neglect pictures or natural scenery, or, indeed, anything which moves you to admiration; stimulate your eyes to carefully observe and your mind to analyse these objects, in order, if possible, to ascertain the source of their charms. Strive to stimulate your inventive faculties and your powers of reflection and original thought, by setting yourself problems, and endeavouring earnestly to find the true solutions of them.

Do not neglect to store your mind with all facts which may be of use to you. The object of our lectures and classes is to give you the most important of these facts in a form as concise, and as easily understood and remembered, as possible; but there is much that with the best will they cannot give you. Here, again, your powers of observation, of analysis, and of reflection must be brought into play; visit buildings in progress and workshops whenever you can, watch the men, examine the materials, question the foreman, ascertain the usual way of doing certain things, and, if possible, why they are so done, and take all opportunities of comparing the drawings and the specification of a building with the work on the spot, in order that you may the better understand the connexion between the actual work and the representation and description of it. Make yourself acquainted, too, as far as you can, with all the business of the office in which you are engaged, and with the manner of conducting it. Finally, do not fail to test your progress, if only for your own satisfaction, by means of the Institute examinations. If you do all this you will, in a few years, become a competent architect's assistant; and if you persevere in the same course for a few years more, you may then venture to undertake any little work on your own account with which you can get anyone to entrust you; but do not be in a hurry to accept any such responsibility,—that is, do not try to practise for yourself too soon; I believe that many a man has ruined his prospects by this fatal step. It is so pleasant to be your own master, and to be an architect instead of a mere assistant; but it is, at the same time, so easy to fail for lack of experience, and to get a character for incompetence which it may take years to get over, if it does not affect your whole career.

While striving to perfect yourself as an architect, do not, as you value your peace of mind, your reputation, and even your success, neglect your character as a man; cultivate courage and energy, perseverance and patience, and keep in mind the oft-quoted advice of the late Professor Cockerell to be "an artist among gentlemen, and a gentleman among artists." Strive to be as honest and true in your inmost thoughts as you are in your dealings with others; shun all affectation of opinion as you shun affectation of manner; shun, too, that vanity and the pharisaic spirit too common among us, which leads a man to think himself the superior of others who happen to be of a different profession, or to hold different opinions. Be forbearing and courteous in all your dealings with the world, and never believe ill of others if you can help it.

In conclusion, cultivate that spirit of fellowship with your colleagues and fellow students which it is one of the chief aims of this Association to foster. Do not neglect the opportunities it affords you for forming friendships with some of the nearly 1,200 members who compose it, and, if possible, make the Association your creditor by taking some part in the good work which it is doing, and will, I hope, continue to do in the future. If you would reap the full benefit of your membership, identify yourself with our work, and be ready to exercise a little self-denial for the general good. This is the spirit which has animated the Architectural Association in the past, and has enabled it to perform what no other society of the kind has ever attempted, and this is the spirit which must animate it

* By Mr. F. T. Baggallay, F.R.I.B.A. (Concluded from p. 311, *ante*.)

still. Believe me, if you act in this spirit, you will never regret it, but will rather consider the honour and pleasure of having helped in such a work so great that you will say what I say now from my heart, namely, "I owe more to the Architectural Association than I can ever hope to repay."

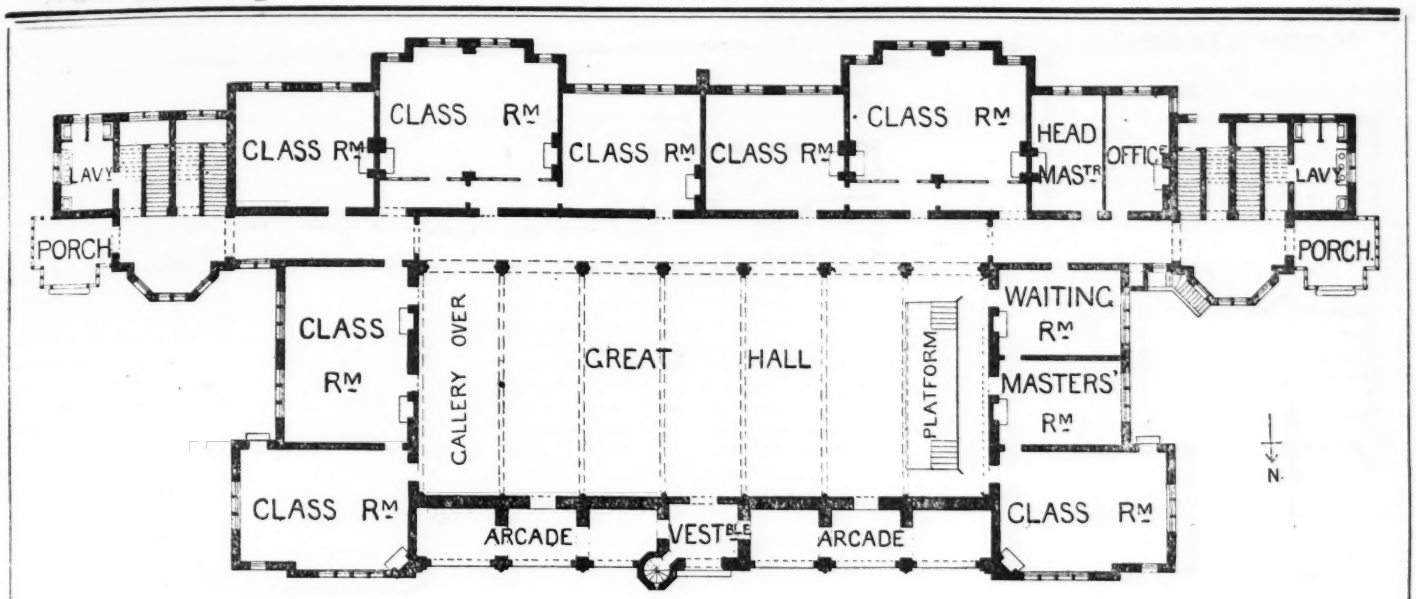
Mr. J. Macvicar Anderson, President of the Royal Institute of British Architects, in rising to propose a vote of thanks to the chairman for his address, said that it had afforded him very great pleasure to be present that night and to have listened to the able and interesting address which Mr. Baggallay had delivered. It was natural that he (Mr. Baggallay) should have devoted a considerable portion of that address to the subject of architectural education. Certainly no more important subject could have occupied the chairman's thoughts or their time. It would be interesting to review the history of architectural education during, say, the last quarter of a century; to compare the position it occupied then with the position it occupied now. Great progress had been made in that quarter of a century, and to nothing was that progress so much to be attributed as to the self-sacrifice, the devotion, and the energy which had been characteristics of members of the Architectural Association. And now, having devoted years of self-sacrifice and devotion to the work of architectural education, they had entered upon a new departure. Mr. Baggallay had not gone into the curriculum in detail, because the subject was so fully discussed in that room not very long since, and they were all very familiar with it. Some had criticised that curriculum as being very wide and diffuse, but those who did so forgot for the moment, he thought, what an architect really was. An architect had to be an artist, an architect, and a man of business; hence the course of education laid down for an architect, if it was to be anything like complete, must be very diffuse, and of a very wide nature. He hoped that in working out their curriculum, what had hitherto been the characteristic, the great characteristic, of English architectural education would never be lost sight of or in any sense submerged, and that was office training. He had noticed that the chairman had referred to that, and he (the speaker) looked upon it as a very important feature, and he was glad to see that that training was not likely in any sense to be interfered with. The advice which the chairman had given to his *confrères* and younger members of the profession was, he thought, admirable. In only one particular would he venture to take exception to those remarks. The chairman had said in his address: "I can scarcely hope in the time at my disposal to prove it to you, but you must take my word for the fact that, with most men, architecture as a profession has far more attraction for the romantic ambitions of youth than for the soberer sense of middle age." He hoped that he would not be considered impertinent if he ventured to think that the chairman was scarcely competent to judge of what the soberer sense of middle age was. He, however, having entered upon that state of middle life, might speak with some degree of authority. He could only say that his experience of the soberer sense of middle age had confirmed him in the respect which he had always felt for his work. The chairman had also said: "If you wish for fortune or for public fame, believe me you can win neither among us." He thought that was going somewhat too far. He ventured to say that there were many honours for the men who really loved the profession and entered upon the study of it with affection. He thought that the best men would always come to the surface, and would acquire even public fame and fortune. The chairman had made some suggestions with regard to one or two points in which the Institute might assist the new scheme of the Architectural Association. They would not expect him (the speaker) to give any opinion on the subject, because all matters connected with the examinations had been so worked out and fully considered by the Board of Examiners, that it would be for them to advise the Council with regard to any changes which might be made. As the chairman occupied a seat on the Council of the Institute, he would have an opportunity of bringing those subjects before them, and he (the speaker) was quite sure that he was only echoing the feelings of all when he said that any views emanating from the Architectural Association would be received by the Council of the Institute with favour. He thought that the names of the Royal Institute of British Architects and the Architectural Association were very much the same, though their functions were very different. The Association was a teaching body, while the Royal Institute was an examining body. He could not help thinking that their united efforts could not fail to have the effect, in the near future, of considerably elevating and raising the status and dignity of the profession.

Professor Kerr said he was happy to congratulate the chairman upon the delivery of his very able and elegant address,—an address which he was quite sure would prove to be useful, not only to the Association, but to the profession at large. There were two points which occurred to him in listening to the address. It seemed to him very remarkable that the work that had been done, and was being done, by that Association in such a profession as that of architecture,—so successfully and so persistently as it had been done,—should be accomplished by students themselves. He thought he knew of no other instance of an adventure of the kind being in any degree so successful. There might be peculiar circumstances attaching to the architectural profession which, upon consideration, would explain that, but he was not prepared at the moment to inquire what those circumstances were; but still he did think that whatever might be the peculiarities attaching to their profession it was a matter of great pride for all of them that their young men should, nearly forty-five years ago, have started upon a career of self-education, and that that career should have been pursued almost without interruption, with the success which had attended it. The other point which occurred to him as worthy, perhaps, of a moment's consideration was that the Association consisted of very nearly 1,200 members, all more or less young men. In the Institute of Architects there were a great many students who were not members of the Association, and he believed outside both societies there were a great many more. Now, the question had been suggested: What was to become of all those young men? It was very easy to be an optimist,—and, perhaps, easier still to be a pessimist,—but he fully believed, and should like the young men present to think it over carefully, that they would not all become architects, and that as time went on, the proportion of architectural students who would eventually become practising architects, or leading assistants, would diminish. But he thought an architect's office was the best school for the training of a votary of industrial art of any kind. He had watched the bearings of that question for many years, and he could mention the names of many men who had received an architectural training and had drifted off, not into trade, and not into water-colour painting, as some of their early friends did at the commencement of the life of the Association, but into what used to be called the subsidiary or minor arts. Those subsidary arts,—he ought not to use the word "subsidiary," for those arts were good arts, and were all branches of one art of which their art was a branch,—were not only most pleasing to be pursued, but were also profitable to be pursued; and he very much doubted whether they would not be more profitable to pursue than architecture. Therefore, he hoped their students would go on a little more hopefully in the pursuit of architectural education,—more hopefully than they might if they took some of the chairman's words to heart. He thought the whole field of industrial design was open to the architectural profession, with regard to the pursuits of the future, in a greater degree than to any other men. Take the ordinary design of furniture,—What sort of work did the ordinary cabinet-maker design? On the whole it was worth nothing. But put an architectural designer in the place of the ordinary designer of furniture, and they at once began to get the work done in a way which would be recognised as artistic.

Mr. Aston Webb, in supporting the vote of thanks, said he had very little to say about the new scheme of the Association, because he cordially approved of it. He believed it would be of the greatest possible advantage to the Association, and for the reason that for several years past he had found that the young men in his office, and others whom he knew who were members of the Association, had ceased to belong to the Classes of the Association because they had ceased to find what they wanted in them, and were going to other classes outside its bounds. Those classes were admirably managed, but the student element of the Association was being scattered over private classes. It seemed evident to him that if that was going on the Association would gradually die a natural death, and he thought that the course which had been taken was the only one which would bring back the students into the Association classes. He had visited No. 56, Marlborough-street, and he was sure that anyone going there would admit that the new premises had immense advantages in accommodation and facilities over the stuffy little rooms which had previously been used. He thought the class-rooms and the Studio were admirable rooms, and all the features seemed to him to be really excellent. But he did regret that there was no responsible person in charge of the premises when he visited them, and he thought that it should be arranged that at certain times of the day any young man could go there and be sure of finding someone who would explain what course he had better enter upon. The chairman in his address had made one remark to the effect that the masters should pay the fees of the students' attendance at the classes. The only objection which he (the speaker) would have to that arrangement was that the students would not appreciate the advantages of the classes if the fees were paid for them. He had several times said to young fellows in his office that if they would go to the Association he would pay their fees; but he found it did not answer. He was afraid that when fathers paid heavy premiums for their sons, the sons did not always appreciate it; but if students had to pay for their tuition themselves, they valued it more. Therefore he was not quite sure whether it was wise to follow the advice of the chairman. Looking at the general question, he thought that from the point of view of the Institute, one could not but be pleased at the action of the Association. The Institute, he was sure, would be the last to take any credit for it; but at the same time he could not help thinking that the examinations which had been instituted by them led and focussed, to some extent, the work of the Association. They were all aware that examination was not education, but it did provide, and it seemed essential in this case to provide, for a certain amount of stimulus which every young man required, and to indicate the way in which he could develope his education. It must be satisfactory to those who supported the examinations at the Institute to find that they had been so much supported by the younger men, and that they were to be still further facilitated by the work which the Association had, he thought, so admirably taken in hand. Before concluding, he wished to be allowed to personally congratulate the chairman upon the honour to which he had attained. It would, he thought, be a bad day for the Association when it ceased to be considered an honour to become President of the Architectural Association. With its 1,200 members it was the highest honour it could give, and to be honoured by a large number of professional brethren must and almost should, he thought, be valued by members of that profession. All would cordially agree with the closing remarks of the chairman's address. What those remarks led to, as he took it, was that the honour of their profession should be upheld by the individual members of it; that they should endeavour not only to criticise but to appreciate each other's work; to know each other personally and to conduct themselves in the private and public affairs of life as gentlemen.

Mr. Leonard Stokes then put the vote of thanks to the meeting, which was carried by acclamation.

The President, in thanking them for the hearty way in which they had received what he had said, and for the way in which they had accorded him their thanks, said that he was glad Mr. Macvicar Anderson had corrected him on one or two points. What he had intended to say was that the great prizes for architects were not so numerous as they were in most other professions. Mr. Webb had found a defect in their arrangements at their new premises; but he (the President) thought that their new assistant-secretary would usually be found there between the hours of ten and one, and two and half-past seven. He had not made any request or suggestion that the masters should pay the students' fees; what he did say was, that in a good many cases it had already



GROUND PLAN.

SCALE 0 10 20 30 40 50 60 70 80 90 100 FEET

Bedford New Grammar School.

been done. He hoped that nobody thought that he under-estimated the honour which had been done him by electing him their President. It had been his ambition for many years past to be President of the Architectural Association, and he did not know of any other post which he should consider it a greater honour to hold than that of their President.

Illustrations.

ENTRANCE HALL, "THE LODGE," NEAR NEWMARKET.

THIS drawing shows the new entrance hall and principal staircase at "The Lodge," Six Mile Bottom. The old house was in a dilapidated state, and possessed no architectural merits; it has now been entirely renovated and enlarged, from the designs of Messrs. Hesketh & Stokes, architects, of London.

The new hall has been formed by the removal of a room on the first floor, in addition to other minor alterations. It is executed throughout in wainscot oak, with polished iron furniture and fittings, wrought-iron dog-stove, the fireplace and hearth being built in small salt-glazed bricks.

The drawing from which this lithograph is taken was in the Royal Academy Exhibition this year.

INCISED SLAB IN EAST HORNDON CHURCH, ESSEX.

IN the chancel of the very interesting church of East Horndon, Essex, four miles south of Brentwood, lies one of the finest incised slabs in England, of which we give an illustration, from a rubbing by Mr. A. H. Brown.

The slab of our illustration is of alabaster, and lies in front of the high altar, though its original situation was doubtless before the altar of the Tyrell Chapel, on the south of the church. It represents Lady Alice Tyrell, draped in a loose robe of the period, confined at the waist by an ornamental chequered band. She wears a mitred head-dress, rings, and a necklace from which formerly depended a beautiful cross, but this portion is, unfortunately, cracked across and obliterated. The figure stands upon an encaustic pavement within a canopy ornamented with vine-leaves, and boldly groined. On each side of the head are the words ihs · mercy, and two shields of the Tyrell and Coggeshall families. At the corners of the slab are the four evangelistic symbols, and in ten niches, five on each side of the canopy, are the sons and daughters of the deceased. Of these all but one bear in their hands labels inscribed with their names, which are as follows, beginning from the left, or south, side of the slab at the top:—"Tomas; Willms sen; Johnes; Will. jur.; Johes Tyrell, cler.; Alicia; Elizabeth; Alionora." The last has her hands clasped in prayer. Enclosing the whole composition is the inscription, which runs thus:—"Hic jacet humata Alicia filia Willām Cogesale Militis et Antiochie consortis sue quondam uxor Johēs Tyrell qui quidem Johēs et Alicia habuerunt inter se exitum Filios et filias quorum nomina hic scripta sunt ex utraque pte istius lapide que obiit anno domini millesimo ccccxxii. cuj. anime propiciet Deus. Amen." "Here lieth buried Alicia, daughter of William Coggeshall, Knight, and Antioche his wife, formerly the wife of John Tyrell, which said John and Alicia had between them issue, sons and daughters, whose names are written on both sides of this stone, who died in the year of our Lord 1422, on whose soul may God have mercy. Amen." The slab measures 6 ft. 6 in. by 3 ft., and is well cared for.

THE BRASS OF BISHOP GOODRICH IN ELY CATHEDRAL.

THE accompanying illustration of a rubbing from the brass of Bishop Goodrich of Ely may prove specially interesting to many at the present time, while the battle of the vestments is still being waged, as the effigy represents the Bishop in full episcopal vestments, as he wore them after the Reformation. Goodrich was consecrated Bishop in the time of Henry VIII., 1534. He was one of the original English Reformers, who, while protesting against the domination of a foreign bishop, wished old Catholic lines to be laid down in the conducting of the "Reformation" in this country, and so is to be distinguished from those who came from Geneva, and desired, in reality, not a *re*-formation but a destruction. He is said to have had a large share in producing the first Edwardian Prayer-book, founded, as is our present book, on "the illustrious Use of Sarum." In 1551 he became Lord Chancellor, and therefore in his brass he is represented as carrying the Great Seal in his right hand, which clasps a Bible, thus signifying his position as a Reformation bishop. He is represented vested in amice, alb, stole, maniple, tunic, dalmatic, and chasuble.

That a slight diversity sometimes existed in the manner of wearing the stole is evident,—unless we attribute the difference to an error on the part of the brass artist,—judging from this brass and that of Esteney, Abbot of Westminster. The Abbot wears his stole *beneath* both his tunicle and dalmatic, the Bishop places his *between* them.

The illustration is from a rubbing taken by the Rev. T. d'Eyncourt Jesse.

HOUSE AT MELBOURNE.

THIS perspective drawing, which was in this year's R.A. Exhibition, illustrates a sketch design prepared for Mr. Wm. Knox, of Melbourne.

In arranging the plan, consideration has been given to the requirements of the climate, but the verandahs, instead of being continuous, as is usual in Australian houses, are divided into separate portions, entering off each of the principal rooms. This arrangement lends itself to the introduction of the gable treatment common in English houses, thus meeting the wish of the proprietor that the style should partake of that character.

The materials are intended to be local freestone and brick, with, on the upper story, half-timbering and rough-cast.

The hall, from which all the principal rooms enter, rises through two stories, and, in addition to the lighting on ground floor, is lighted by a wide mullioned window above the entrance-porch and vestibule. The principal staircase lands on a gallery, carried round the hall at the first-floor level, and designed to afford ample space for the hanging of pictures. On the inner side of the gallery is a balustraded screen, which serves to mask the passage by which the various bedrooms and dressing-rooms communicate with the bath-room. The nursery wing, with separate bath-room, &c., is on the entresol over servants' hall and kitchen, and the servants' bedrooms are on the attic floor. The architect is Mr. Robert Mortimer, of London.

BEDFORD GRAMMAR SCHOOL.

THIS building, which was formally opened on Thursday last, has recently been erected at Bedford for the Governors of the Harpur Trust, the old buildings having been found for some time inadequate to the requirements of the school.

The building consists of a great hall, 100 ft. by 50 ft., and 51 ft. high, round which on three sides are arranged a series of forty-one class-rooms on three stories.

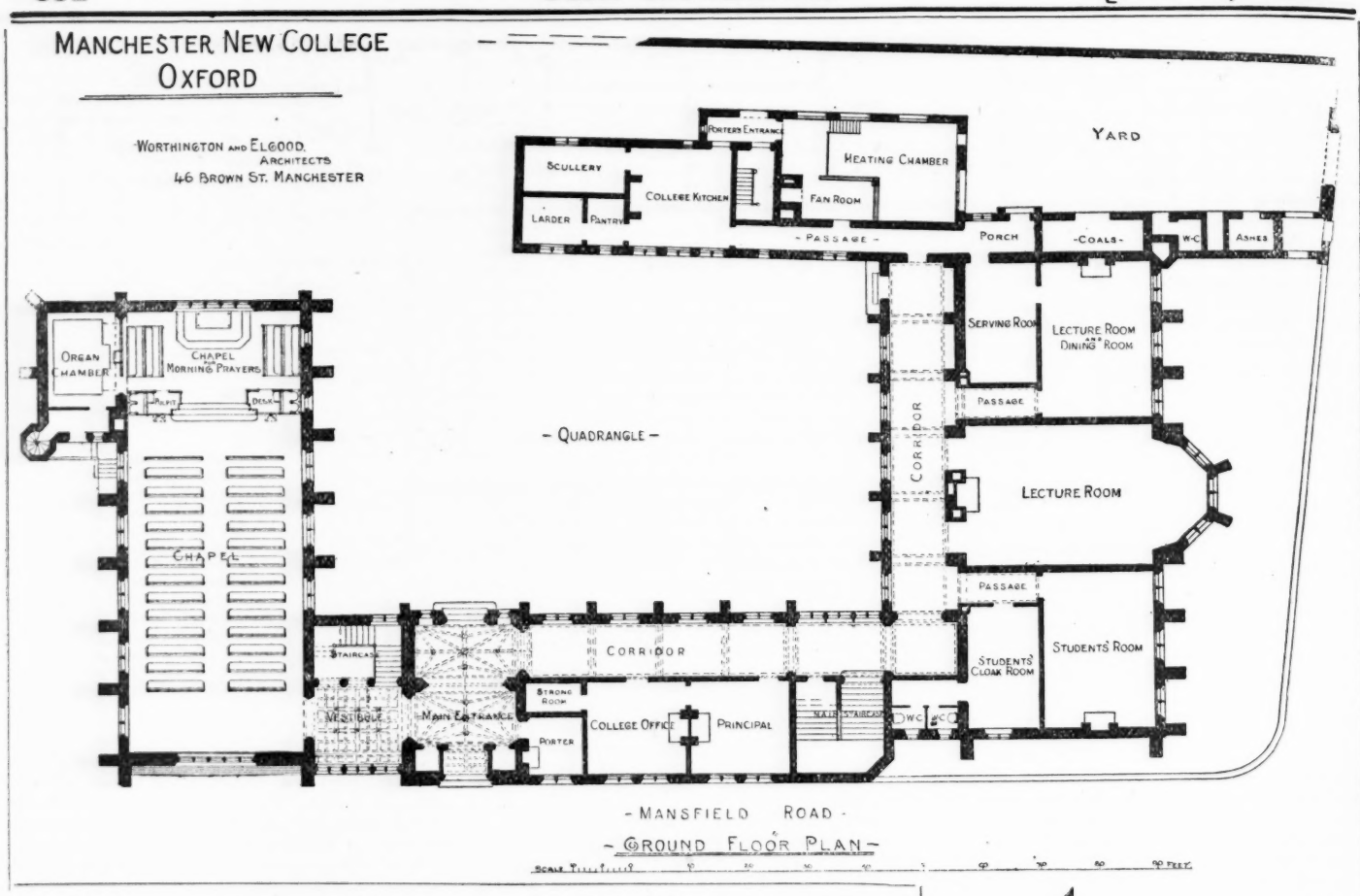
The class-rooms are approached from the hall on the ground-floor, and from galleries round it on the two upper floors, but provision is made for giving access to the class-rooms without passing into the hall when this is in use for examination or other purposes. The class-rooms are of different sizes, arranged to accommodate classes of forty, thirty-six, thirty, and twenty pupils respectively, but the large class-rooms can be divided by movable partitions. The total accommodation provided is for 1,026 boys, while the great hall and galleries will seat about 1,200 persons.

There are also rooms for the head-master, and a masters' common-room, an office and printing-room, waiting-room, and lavatories, &c.

The offices for boys are in separate blocks outside the main building.

The design is in the Late Perpendicular or Tudor style, red Cattybrook bricks from Bristol being used for the external facing, with Weldon stone dressings.

The roofs are covered with Broseley tiles, and the flêche with sheet-copper. The external doors, the dormer windows, and the tracery of the flêche are of oak, the roof of the great hall and the joiners' work generally being of pitch-pine. The greater part of the north front is occupied by an external ambulatory, broken in



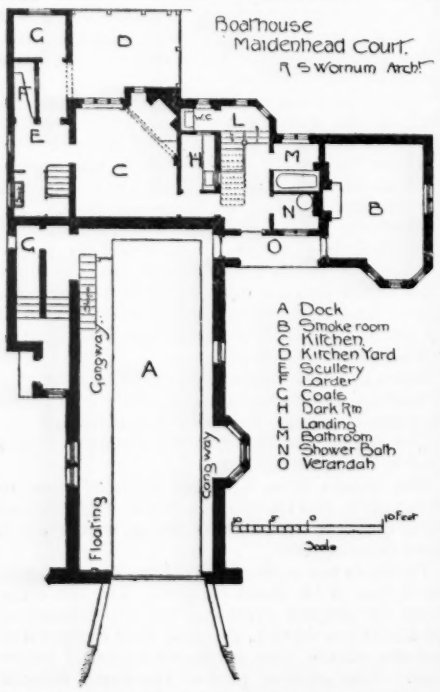
the centre by a projecting porch, with organ-chamber over, opening into the great hall, and a turret for flagstaff.

The warming is partly by means of Boyd's Hygiastic stoves, and partly by hot-water pipes connected with radiators. All the rooms are ventilated by means of flues connected with three ventilating-shafts, and an upward current is induced by gas-jets in the latter, and these can be lighted from the hall by an electric current. The whole of the warming and ventilation has been carried out by Mr. D. O. Boyd.

The architect of the building was Mr. E. C. Robins, F.S.A., and the work was carried out under his superintendence until the unfortunate illness which compelled him to give up all work about a year ago. Since January last the work has been under the superintendence of Mr. John Slater, B.A. The builder is Mr. J. Spencer, of Bedford, and Mr. H. G. Tanner is the clerk of works. The total cost of the building will be slightly over 20,000*l.*, exclusive of fittings.

BOAT-HOUSE, MAIDENHEAD COURT.

This boat-house was built for Mr. Edward Wagg on the Thames at Maidenhead. The



dock contains a floating landing-stage. Above on a brick and iron floor, is a large room and covered balcony. Attached to the boat-house is a wing of bedrooms, dressing-rooms and baths, and necessary offices for a short visit.

The exterior is of red brick, Doulting stone and half-timber work, painted white, Broseley tiles being used for the roof covering. The walls of the inside of the boat-house, above and below the water-line, are faced with Rock Buff bricks. The architect was Mr. R. Selden Wornum, and the builders were Messrs. J. Kinninmont & Sons, of London.

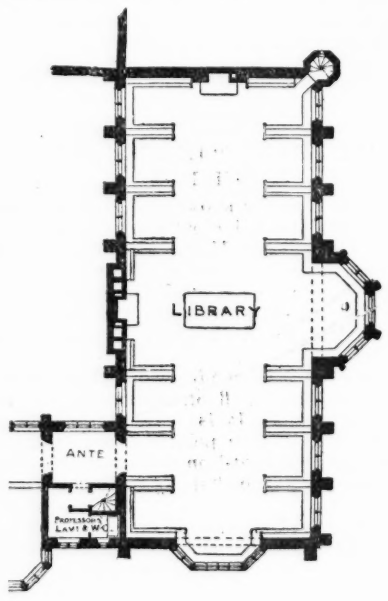
The drawing from which the illustration is taken was exhibited in the Royal Academy this year.

CHAPEL IN THE EAST OF LONDON.

This chapel is to be erected on a site in the Albert-road, North Woolwich, a district which has of late been rapidly increasing, chiefly with a working-class population. The drawings reproduced show the completed building, of which only a part is to be carried out at present. A temporary gable cuts the chapel in two, and the part towards the back is to be built first, giving accommodation for about 200 seats.

It is not intended to confine the uses of the building solely to the ordinary Sunday services. The suite of class-rooms is designed to meet the requirements of a Sunday-school, and the chapel will be seated with chairs to render it more readily available as a hall for meetings or entertainments. In addition to this, in the construction of the roof substantial tie-beams are introduced with a view to the room being used as a gymnasium. The class of people in the district, and the varied uses to which the building will be put, has naturally influenced the general arrangement of the plan and also the materials adopted. Thus, to economise in cleaning and repairs, the walls internally are faced throughout with pressed bricks, which can be washed, and, except in the ceilings of the smaller rooms, no plaster will be used. Externally, the walls are faced with red brick, the roof is covered with slates, and the flat over the class-rooms with asphalte.

The deep alluvial deposit extending eastward of the River Lea through the Plaistow and Barking Levels renders ordinary foundations impossible in the North Woolwich district. The simplest method, and one now usually adopted for public buildings, is to float the structure on a "raft" of cement concrete extending over its whole area. Though contrary to the accepted practice for ordinary sites, it is advisable to leave untouched the natural surface of the ground, and lay the bed of concrete actually on the top of the turf. This plan has been



- Plan of Library on First Floor -

adopted in the present case, and when the "raft" has been raised to the requisite thickness it will be finished level with 4 in. of coke-breeze concrete, to which the floor-boarding, having been bedded in tar, will be nailed direct.

The chapel is a branch of the Canning Town Congregational Church, and is erected under the auspices of the Metropolitan Essex Congregational Association, of which Mr. Thomas Scrutton is the treasurer. The works, although tendered for, have not yet been commenced. Mr. F. W. Troup is the architect, and the designs from which the lithograph is taken were exhibited in this year's Royal Academy.

MANCHESTER NEW COLLEGE, OXFORD.

In publishing the views of this college last week, we were unable to make space for the plan, which we now give.

Guildford Surveyorship.—For the vacancy in the Borough Surveyorship, Guildford, 154 candidates applied. The committee of selection chose from this number six of the candidates to appear before the Council on the 27th inst. After a careful investigation, Mr. F. T. Maltby, A.M.I.C.E., Borough Engineer, Dorchester, was appointed, at a salary of 300*l.* per annum.

THE LONDON COUNTY COUNCIL.

The usual weekly meeting of this Council was held on Tuesday afternoon at Spring-gardens, the Chairman, Sir John Lubbock, presiding.

Loans to Local Authorities.—On the recommendation of the Finance Committee, it was agreed, subject to the usual conditions, to lend 2,938*l.* to the Vestry of St. Martin-in-the-Fields, for paving works; 5,600*l.* to the Guardians of St. Saviour's Union, for the purchase of land upon which to erect casual wards; and 1,000*l.* to the Guardians of St. George's-in-the-East, for tar-paving works and iron staircases at their schools.

Limekiln-dock Sewer, Ben Jonson-road, E.—The Main Drainage Committee reported as follows:—

"Complaints having been received from the Vestry of Mile-End Old-Town and from the owners and occupiers of property in Ben Jonson-road, of frequent floodings in that locality, we instructed the Engineer to report upon the matter. He states that the road referred to is drained by the Council's Limekiln-dock sewer, which is a very old and defective one, the invert in Ben Jonson-road and the contiguous roads being considerably out of level. He advises that the only proper and effective remedy is to reconstruct the sewer from the northern low-level line at Rhodeswell-road to Ben Jonson-road, a distance of 2,000 ft., and to give it a good gradient by deepening it at and from the low-level outfall. We are of opinion that this work should now be undertaken, and we recommend—

'That, subject to an estimate to be submitted to the Council by the Finance Committee, as required by the statute, the sewer be reconstructed between the points above named; that the necessary contract drawings and specification be prepared, and that an advertisement be issued inviting tenders for the work.'"

The recommendations were agreed to.

Decision to Acquire Certain Street Tramways.—A little after four o'clock the meeting was made "special" for the purpose of considering and deciding whether the London County Council should exercise its right to require the London Street Tramways Company to sell to the Council the undertaking authorised by the London Street Tramways Act, 1870. The tramways referred to extend from the south end of Tottenham Court-road to Kentish Town, and from King's Cross to Camden Town.

Mr. Bassett Hopkins, the Chairman of the Highways Committee, moved—

"That a notice in writing under the seal of the Council be forthwith served upon the London Street Tramways Company, requiring the Company to sell to the London County Council the whole of their tramways and works and undertaking authorised by the London Street Tramways Act, 1870, under the conditions and in the manner provided by section 44 of that Act."

Mr. Benn seconded the motion.

Mr. Robinson asked whether, in the event of the proposition to purchase these undertakings being carried, any future arrangement would be made in the interests of the old and meritorious officers of the Tramways Company.

Mr. Hopkins, in reply to this inquiry, said that in all probability the tramways would be re-leased to the same company which held them now.

Mr. Beachcroft moved, as an *addendum* to the motion, the following words:—

"That the Council, in passing this resolution, has no intention of itself working or seeking power to work the tramways therein referred to."

Mr. Antrobus seconded this *addendum*, which was opposed by several members of the Council, who objected to it as binding the Council. In their opinion, the Council and its successors should be unfettered in this matter, and should be free, not only to acquire the tramways, but to work them themselves if deemed advisable in the public interest. On being put to a show of hands 43 voted for the *addendum* and 40 against it. A division being demanded, the result was: For the *addendum*, 59; against it, 47. The *addendum* was therefore adopted.

On the motion for the adoption of the motion as thus added to,

Mr. Fardell moved, as an amendment:—

"That, having regard to the fact that the question of the purchase of the London tramways by the London County Council has never been submitted to the ratepayers of London, and was not even anticipated at the time of the election of the present Council in 1889, it is inexpedient for the Council at the present time, when the burden of taxation is so heavy as to interfere with the Council carrying out improvements of an urgent nature, to enter into financial engagements which will bind its successors."

Colonel Rotton seconded the amendment.

Col. Hughes said he should vote for Mr. Bassett Hopkins's motion, on the ground that the Council would only be acting within their powers in making what he thought was a very desirable experiment.

After some further discussion, Mr. Fardell's amendment was put to a show of hands, and lost by an overwhelming majority.

Mr. Campbell then proposed, and Major Probyn seconded, a further amendment, which was very much on the lines of Mr. Fardell's amendment, and shared the same fate.

The original motion, as amended, was then put to a show of hands, when 82 members voted for it, and none against it. Under ordinary circumstances, this vote would, of course, have been decisive, but according to the statute governing the question, no resolution requiring the Company to sell would be valid unless two-thirds of the members constituting the Council were present *and voted*, and unless a majority of those present *and voting* concurred in the resolution. As the Council consists of 137 members (*minus* one or two vacancies), it is obvious that 82 was not two-thirds of the whole number of the Council, and a division was demanded. The Chairman said that there could be no division, as, there being no opposition to the motion (on the part of those actually voting) there were no "tellers" for the "Noes." Upon this, two members volunteered to oppose Mr. Hopkins's resolution (although they were really in favour of it, and had just voted for it) as giving them the technical right to act as "tellers" for the "Noes." The Chairman having accepted them as "tellers," the division was called, and 90 members (including tellers) voted "Aye," and only 2 (the two "tellers" who so magnanimously did violence to their cherished convictions under the circumstances we have mentioned) "No." As 92 members had now voted, 90 being "Ayes," the necessary two-thirds majority required to render the resolution valid had been obtained, and the victorious party indulged in cheers. It will be asked, "Why all this manœuvring and party feeling?" The answer is that these tactics were resorted to in order to circumvent a minority of the Council who, not approving of the proposed purchase of the tramways, had, on two previous occasions,—acting, as they contend, within their right,—abstained (as they, of course, did this time) from voting either way on the question, and had thus, in the absence of a less vigorous whip-up of "Progressives" than took place this week, thwarted the motion. It is right to say, though, that some of the "Moderates" voted with the majority, not agreeing with the view of the question taken by the abstentionists, but believing that the proposed experiment is one that ought to be made in the interests of the ratepayers.

On the motion of Mr. Bassett Hopkins, the following recommendations were then agreed to without discussion:—

"That the Clerk be instructed to apply to the Board of Trade for its approval of the terms of the foregoing resolution, and to serve the notice therein referred to so soon as the Board of Trade shall have signified its approval."

"That it be referred to the Finance Committee to take the necessary steps to enable the Council to raise the money required for the purpose of purchasing the said undertaking."

The "special" meeting then terminated, and the ordinary business of the Council was proceeded with.

Proposed Appointment of a Parks Superintendent.—The Parks and Open Spaces Committee brought up a report recommending the appointment of a Parks Superintendent, at a salary of 700*l.* a year. After a long discussion, the further consideration of the question was postponed until next week, and the Council adjourned.

The Blackwall Tunnel.—Amongst other reports which were not reached at Tuesday's meeting was one from the Bridges Committee, recommending the acceptance of the lowest tender (Messrs. S. Pearson & Son's, amounting to 871,000*l.*) for the construction of the Blackwall tunnel. The report will come up for discussion next week. The full list of tenders for the work appeared in the *Builder* for the 17th inst., p. 301.

Hours of Work.—Two letters on this subject are unavoidably held over for want of space.

The new Workhouse Infirmary, Grantham, is being warmed and ventilated by means of Shorland's patent "Manchester" stoves and exhaust ventilating shafts, supplied by Mr. E. H. Shorland, of Manchester.

A NEW TUNNELLING DEVICE.

In the construction of the "Stampede" tunnel, by which the Northern Pacific Railway passes under the Cascade Range of mountains, a new device has been introduced, which should prove of great benefit to roadway engineers. This consists of a large travelling platform or table, which works in the tunnel. The platform is mounted on uprights or legs, which terminate in a couple of 18-in. wheels. There are two rails laid specially for carrying the platform, spaced 16 ft. apart. The platform is high enough to allow the ballast trucks to be run up under it, and, in getting out the heading, it is pushed up to the working face. The mountain through which the tunnel is pierced consists largely of shale. In removing material excavated from the heading the men wheel the spoil on to the platform,—which would be level with the bottom of the heading,—and from thence dump it through holes into the spoil-trucks beneath. As the platform stands clear of the lines on which the trucks run, the latter can be taken away as filled. The platform-carriage was specially useful in blasting, for the men had simply to throw their tools down on it, and the whole could be run back to a safe distance, and after the blast it could be brought forward again, when the work could be resumed at once. The heading work and the excavation of the breast could also, in this way, be carried on simultaneously without the two interfering with each other; it afforded, in fact, a two-deck system. The arrangement was also of great use in timbering, and also in manipulating the electric light. This carriage was used throughout the entire work, and to it the contractor largely attributes the rapid manner in which the tunnel was excavated.

The construction of this tunnel was attended by unusual difficulties. The plant required had to be hauled in wagons and sleds a distance of from eighty-three to eighty-seven miles through thick forest, deep mud and snow, the rate of progress sometimes being not above a mile a day on account of the mud. The tunnel is at an elevation of 4,200 ft. above sea-level, and in places the snow was so deep that the plant had to be unloaded into sleds. The contractor spent 25,000*l.* before commencing on the tunnel itself.

Correspondence.

To the Editor of The Builder.

GRAY'S INN HALL.

Sir,—In your publication of the 17th inst. are two letters from correspondents on the subject of "Gray's Inn Hall," and which letters, thinking they required some recognition by the Society, I laid before my Committee. The following is the result of its consideration. Your correspondent, Mr. Goldsmith, seems to think the Society is anxious for the preservation of the cement covering to the outer faces of the walls of the Hall. This is not so, as it certainly would have been better if an eminent architect had not ruined the surface of the brick and stonework of the building, when he attempted to improve what he considered to be inferior architecture. Our Committee wishes to put a stop to such wanderings from common-sense, and would begin now by saying, "Do not mutilate further in the vain hope of mending mischief done."

If objects at home are not a sufficient warning, we may remember the Church at Murano, and that of San Ambrogio at Milan, where the scouring of brick walls has been so disastrous.

The bricks of Gray's Inn Hall were never too good, and cannot now be bettered in substance and appearance by being "rubbed down" below the indents of the hacking. Mr. Goldsmith must have accepted a too hasty conclusion as to the result of his proposal.

Your second correspondent is evidently more anxious to preserve the reputation of this society than to protect ancient buildings. The way by which the society could bring upon itself deserved contempt would be, if it ceased to protest against the mistaken zeal so childishly exercised in trying to bring back what has been lost, either from neglect, natural decay, or mischievous meddling. There are still many examples of English architecture remaining to us of priceless value, which will be ruined unless the people represented by such enthusiasts as Messrs. Goldsmith and Nevill are persuaded against themselves. Numbers of buildings,—never intended to be so dealt with,—will

be covered with cement, or something more distressing in its effect; and many that always were plastered will have that serviceable garment stripped off them, and probably under the direction of some specialist (lay or professional), eminent, or not so dangerous.

The members of this Society are quite capable of understanding what must have been the effect of the surfaces and forms underlying the present poor covering of Gray's Inn Hall, without wishing to have their imagination proved to them up to a worse point. There are much worse objects in London than rather dull buildings. For example, ten or fifteen years ago the general appearance of the quadrangles of Gray's Inn was that of a homely and broad aspect of quiet dignity. Now, the place has been brightened up with incongruous plates of sheet-glass and bad green paint, so as to have lost much of those invaluable elements of good architecture understood by the terms breadth and dignity. This, as well as the proposal to re-transform the Hall, are but expressions of the prevailing restlessness of the time.

The cases of Staple Inn and Gray's Inn Hall are not parallel. This Society still holds its opinion as to the treatment followed with regard to the former; but it has always recognised the care and ability with which its architect carried out the wish of its employers. Fortunately, oak and plaster are not so staring as modern red brick and stonework are in London—the oak will get greyer, and the plaster can always be whitened. On behalf of the Committee, THACKERAY TURNER,

Secretary to the Society for the Protection of Ancient Buildings.

October 23, 1891.

CONCRETE BUILDING.

SIR,—Would one of your readers kindly inform us who are the makers of Henley's revolving and self-fastening boards for concrete building?

JOHN BIRCH & CO.

The Student's Column.

MARBLES.—XVIII.*

PURBECK AND PETWORTH MARBLES.

AS the marbles of Purbeck and Petworth have many features in common, it will be convenient to consider them together, and to indicate the chief points in which they differ from each other. Both stones are remarkable from their historic associations, especially the Purbeck. Geologically, the last-mentioned is derived from the Upper Purbeck formation of the "Isle" of Purbeck, in Dorsetshire, and was quarried near Swanage and Corfe Castle, occurring in beds which vary in thickness from 9 in. to 1 ft. It could be obtained in blocks 7 ft. or 8 ft. in length; and many tints of blue, red, and grey were raised. The marble dug in recent years is chiefly of a dark, greenish-grey colour, with a purplish tint. The material was highly esteemed in the Middle Ages. The slender shafts and columns, the sepulchral monuments, and interior decorations of a like nature found in many cathedral and other churches, not only in the South of England, but as far north as Lincoln, all testify to its abundant use from the eleventh to the sixteenth centuries. It is a significant fact that throughout the Mediæval churches of Devon it was almost universally employed for enrichments, showing that the value of the now celebrated Devonshire marbles was then unknown. It would be tedious to chronicle the numerous edifices in which Purbeck marble can be seen, but the following examples may be quoted. A certain number of the shafts in Westminster Abbey are constructed of it, as well as portions of the Temple Church, the shafts of Lincoln Cathedral, and the tomb of William II. in Winchester Cathedral. In Salisbury Cathedral there are many minor embellishments of the material,—including the tombs of Bishop Roger de Mortival and Bishop Poore, and the shafts and mouldings of the magnificent pulpit designed by the late Sir Gilbert Scott. St. Mary's Church, Warwick, possesses a fine example in the tomb of Richard Beauchamp, Earl of Warwick; particulars of the cost of this magnificent work are still in existence. In the ancient church at Christchurch there is a beautiful thirteenth-century sacristy of the time of Henry III., the shafts of which are of Purbeck marble. Mr. Lee states that the same material was used for the original altar in the Lady Chapel; the top of it is a fine slab 11 ft. long and 3 ft. 10 in. wide. This chapel had been completed by 1406, and probably previous to 1395. The Church of St. James, near Corfe Castle, is a remarkable building for so remote a village. It was constructed at a great cost by the Eldon family, from freestone and marble procured on the estate, and thus constitutes a valuable work of reference, assisting in the identification of the exact *locale* of some of the varieties of the marble. We learn that those of which the pillars are made were quarried from the Upper Purbeck beds, at a place called Blashenwell, and that the stone for the outside came from the "burr" beds of the same locality. The "burr" is a comminuted shell-limestone occurring at the base of the Upper Purbecks; the squared stone used in Corfe Castle is derived from the same beds. The importance of correctly identifying the several varieties of Purbeck marble will presently be seen.

The Petworth, or Sussex, marble is found here and there in the formation known as the Weald Clay, especially in the upper part. This limestone is composed principally of the fossil remains of fresh-water snails, and it has been named Sussex marble in consequence of its great development in that county, though it is not entirely confined to it. Although the stone is not remarkable for any particular beauty of colour, being generally of an uniform bluish or greyish-green tint, the sections of the chambers of the shells give it, when polished, a pleasing appearance, and it was in consequence frequently made use of, in olden times, in the construction of tombs and sepulchral monuments in many churches. It has especially been much employed for slender shafts to support the triforia of cathedral churches, as at Canterbury and Chichester. The Episcopal chair of Canterbury is also formed of it.

The shells found in Sussex marble are sometimes decomposed, and their casts alone remain, the interstices being filled up with indurated marl, or calcareous matter. In the coarser varieties the cavities formed by the decomposition of the shells still remain; in the compact masses the shells are transformed into calcite, and the stone in general has been more or less altered in the same manner. Various shades of grey, blue, and ochre, interspersed with pure white, are met with. Very few bivalves occur in this limestone, but in western Sussex a marble mottled with green, blue, and grey is occasionally found, which is composed of large bivalves mixed with a few univalves and fragments of bones of reptiles.

From their general resemblance the Purbeck and Petworth marbles have frequently been mistaken the one for the other. The instructions usually given for distinguishing them, which have apparently emanated from those who possess but a very superficial knowledge of palæontology, are so very inaccurate that we may profitably dwell for a moment on the subject. It is not the first time that we have alluded to this matter; and, in order to assist in the better determination of those marbles which come from the Purbeck and Wealden formations respectively, the student is asked to pay close attention to the following observations.

Both the Purbeck and Petworth marbles are limestones of fresh-water origin, and nearly the whole of their substance is made of the shells of minute *Crustaceæ*, and of the fresh-water gastropod, which, until recently, was known as *Paludina*. The correct name of this mollusc, as amended according to the strict rules of nomenclature adopted by palæontologists, is *Viviparus;* but the name "*Paludina*-limestone," or "*Paludina*-marble," as the material is called, is so well-known to all architects that we do not think it advisable to change the name, although we should be perfectly justified, from a scientific point of view, in doing so.

The chief distinguishing features consist in the different species of *Paludinæ*, and the tints of the stones, though their colour is only of secondary importance. It is commonly thought that the two kinds of marble may be distinguished from each other in that the species of *Paludina* characterising the Sussex stone is much larger than that of the Purbeck. This is very well in a general sense, but it by no means always applies. The Purbeck *Paludinæ* are, without exception, comparatively small species, those in the commonest kind of marble being especially so; whereas the Sussex marble *Paludinæ* are at least of three distinct kinds, two of which (*P. Sussexensis* and *P. fluviorum*) are large and the other rather small, or about the same size as those common to the Purbeck. We are referring now only to those species which are important as rock-formers, and which therefore materially assist in making up the stone. The Sussex marble made up of the smaller species of *Paludinæ* is seen at Staplehurst, Idenbourn, Frittenden, and Crowhurst; whilst the others containing the larger species are met with near Plaistow, and south-east of Chiddingfold, and at Bethersden, Petworth, &c., respectively. The Petworth is the best-known kind of Sussex marble.

Mr. Wm. Topley, F.R.S., of the Geological Survey, gives the following particulars of the subordinate beds of limestone and sand found at different horizons in the Weald Clay, showing the relative positions of the strata from which the marbles were obtained:—

7. Sand.
6. Limestone (large *Paludina*).
5. Sand and sandstone with calcareous grit.
4. Limestone (large *Paludina*).
3. Limestone (small *Paludina*).
2. Sand and sandstone.
1. Horsham stone.

From what we have said it will be seen that the only variety of Sussex marble that can be confounded with the Purbeck, is that along the horizon at Staplehurst, &c.; and in this case the difference in tint somewhat assists—the stone being of a greenish hue. So far as we can learn, it is never pink, like some varieties of the Purbeck. Moreover, the species of *Paludinæ* and *Cyprídea* are different in the respective stones, as can easily be ascertained on close examination.

These marbles, as a class, cannot be said to be durable, even in interiors, whilst they do not always take such an even polish as could be desired; nevertheless, they compare favourably with many stones of a similar character. The competition of other marbles in the market, which are not only more durable, but have some pretensions to beauty, together with the costly process involved in raising them in any quantity from the beds in which they are so sparingly found, and in such thin seams, have doubtless had much to do in curtailing the industry; but the Purbeck and Sussex marbles will always have a charm of their own for the student of Mediæval architecture.

* By a printer's error, last week's sub-heading was misprinted "Devonshire" Marbles. For "Devonshire" read "*Derbyshire*."

OBITUARY.

MR. WILSON W. PHIPSON, M.INST.C.E.—It is with much regret we record the death of Mr. Wilson W. Phipson, M.Inst.C.E., of John-street, Adelphi, and elsewhere. He died very suddenly on Wednesday morning, the 21st inst., at his Putney residence, being at the time apparently in the enjoyment of robust health. This sad event is attributed to the great strain upon his constitution from the extent of his professional duties, and to the anxieties and the laborious journeys which they entailed. Mr. Phipson had attained his high position after many years of arduous industry and persevering study, and at the time of his death he was widely recognised as an eminent practical authority on the heating and ventilation of public buildings. Born at Ladywood, near Birmingham, on August 31, 1838, he was educated in Brussels and Paris, where, through the instrumentality of Earl Cowley, his father was enabled to enter him as a student at the Ecole Impériale des Ponts et Chaussées. After having done some successful work in Paris, Bordeaux, and Holland, connected with the heating and ventilation of hospitals and Government buildings, he came to England about the year 1860, and soon made a name in that branch of his profession which he had adopted. There are few public buildings of modern date in Great Britain on which he has not been engaged, in conjunction with some of our leading architects, more especially the Royal Albert Hall, the Universities of Glasgow and Edinburgh, the National History Museum, the Institution of Civil Engineers, &c., &c. One who knew him well writes:—"He was a man of generous disposition, wonderful activity and industry, sterling worth, and the strictest integrity. His loss will be long severely felt by a large number of friends and colleagues."

MR. GEORGE WALLIS, F.S.A.—We regret to announce the death, at Wimbledon, of Mr. George Wallis, until lately the Keeper of the South Kensington Art Collections. Mr. Wallis died on Saturday last, at the age of eighty-one. Though Mr. Wallis had been in failing health for some time, his death was unexpected by his family and friends; indeed, only on the previous day he wrote a cheerful letter to his son, Mr. Whitworth Wallis, the keeper of the Birmingham Corporation Art Gallery. Mr. George Wallis's life was a busy and

useful one. It was wholly devoted to the promotion of Art Instruction. As far back as 1841 he was connected with the Government School of Design at Somerst House. In 1843 he became the master of the Spitalfields School of Art, and in the same year went to Manchester as headmaster, a position which he resigned in 1846. He joined the South Kensington Department in 1863, as Senior Keeper of the Art Collections.

Mr. W. G. Habershon.—The *R.I.B.A. Journal* for the 22nd inst. contains a brief memoir of the late Mr. W. G. Habershon, architect, formerly of the firm of Habershon & Pite, and latterly of the firm of Habershon & Fawckner. He was a pupil of his father, Mr. Matthew Habershon, and commenced practice at St. Neots in 1843. He was in his seventy-third year at the time of his death, which took place on August 13 last.

GENERAL BUILDING NEWS.

New French Protestant Church in Soho-square.—The foundation-stone of this new church, of which Mr. Aston Webb is the architect, was laid by the Lord Mayor on Wednesday last. We gave a view and description of the church in the *Builder* for June 27 last.

The Bishop's Palace, Wakefield.—The walls of this building are rising fast. Circumstances prevented the formal laying of a corner-stone at the proper time, but on Saturday last a memorial-stone was laid inside the chapel, in the north wall, bearing this inscription:—"Ad majorem Dei Gloriam sumptus horum ædium conferendos necnon lapidem quem videtis ponendum boni cujuslibet operis adjutrix indefessa. A. M. Boyd-Carpenter, Episcopi Riponensis uxor Die xxiv. Oct., A.D., MDCCCXCI." A specially-designed trowel of delta, with silver mounting, and incised silvered inscription on the ebony handle, commemorating the occasion, was presented to Mrs. Boyd-Carpenter by the architect. The building is of "purpose-made" red bricks, long and thin, with special mouldings, the windows having stone sills with brick mullions. The covering is to be of blue Welsh slate. The plan consists of a porch with ceiling groined in brick, beneath a low tower of four stories, leading into an outer hall; and large central hall, with staircase and lantern, and with open roof. Out of this hall are entered the drawing-room, chaplain's-room, library, and chapel; and a gallery round leads to the various bed and dressing rooms. At the top of the front stairs is a lobby, which leads to the examination hall over the chapel. The chapel is of domestic character, with a flat ceiling. The dining-room is next the kitchen wing. Accommodation is provided also for twelve candidates for Holy Orders, with a separate chamber for each, approached by a small staircase leading from the hall. Mr. William White, F.S.A., is the architect.

Consecration of Fenton Church.—On the 3rd inst. the Archbishop of York (Dr. Maclagan) performed the consecration service in connexion with the new parish church which has just been completed at Fenton. The architect of the new building was Mr. Charles Lynam, of Stoke, the diocesan surveyor. The building consists of a nave and six bays with clearstory, aisles, and north and south porches; a chancel, with a chapel on the south side and a clergy vestry on the north; and a north transept combining a choir vestry and an organ chamber. A tower is designed for the west end of the nave, and the foundations have been put in, but this portion of the building is not included in the present contract, and will be completed at some future period. The church will accommodate about 1,000 worshippers. The walls are of brickwork with facings of the same, with the exception of the interior of the chancel, which is of Ashlar stone. The style of the building is English Decorated. The contract has been carried out by Messrs. H. & R. Inskip, of Longton, and the cost of the building is a little over 6,000*l.*

Home for Incurables, Newcastle-on-Tyne.—The foundation-stone of the new Home for Incurables, which is being built by the Newcastle Corporation, as trustees of the Hospital of St. Mary Magdalene, was laid on the 22nd inst. by Mrs. Thomas Richardson. The new building will provide day-rooms and wards for sixty-eight patients, with accommodation for the staff of officials and nurses, and is planned on a semi-pavilion system. The cancer cases will be in a distinct pavilion, with connecting corridor, and on the ground floor only. The corridors and staircases throughout will be of fire-proof construction. The main corridors will serve as ambulatories for patients in inclement weather. The buildings will be on a raised terrace. The new home will be erected of bricks faced with pressed red bricks from Hogarth & Co., of Choppington, dark red Normanby quoins to windows, and Prudham stone dressings. Messrs. Middlemiss Bros., contractors, are carrying out the work under the superintendence of the architect, Mr. Edward Shewbrooks, F.R.I.B.A., Mr. David Reid acting as clerk of works. The contract price is 12,668*l.*, and the total cost, including furniture, will be 15,000*l.*

Re-opening of Welsh St. Donat's Church, Glamorgan.—The ancient fourteenth-century church of Welsh St. Donat's was re-opened on the 14th inst., after restoration. The open oak roof was in a dangerous condition; the plastering was perishing on the walls; the floor was damp and unhealthy, and the tower was cracked, and in an unsafe condition. The roof has now been restored in oak, the walls newly plastered, the tower painted and rebuilt in parts where necessary, new wood floors and ceiling have been furnished in the tower, Godwin's tile floors have been placed in the chancel, and a wood block floor under the chairs on concrete; a new oak pulpit, altar, lectern, font-cover, and chair have been furnished. The windows have been newly glazed in fret lead, new seats have been placed in the chancel, two new windows have been provided, as also altar cloth and hangings, a new stove for heating, and hanging coronas fitted with "Veritas" lamps for lighting the edifice, and new oak doors. The exterior has also been painted. The nave has also been fitted with chairs, in place of the old high seats. The cost of the work has been about 700*l.* The contractor, Mr. W. A. James, of Cowbridge, has carried out the restoration from designs and under the supervision of the architects, Messrs. Kempson & Fowler, of Llandaff.

Institute Buildings, Derby.—The memorial stones of a new building for the Derby Young Men's Christian Association, which is to be designated as the Victoria Institute and Shaftesbury Memorial, were laid a short time ago. Plans for the building have been prepared by Messrs. Fawckner (of Newport, Monmouthshire) and Naylor & Sale, architects, of Derby, but it is only intended to proceed with a portion of the work until additional funds have been obtained. The front elevation will be composed of red Heather bricks, with dressings of white Hollington stone. The institute will be entered by a lobby into a hall 10 ft. wide. There will be a staircase down to a gymnasium and public-hall, and there will be two shops in the front. On the first floor, at the top of the staircase, the secretary's office will be placed, with a class-room, two reading-rooms, and a games-room adjoining. On the second floor there will be the caretaker's living room, &c., bedrooms for the accommodation of occasional visitors to the town, and rooms which can be used for classes, &c. The gymnasium it is proposed to make 56 ft. long by 34 ft., and 23 ft. high, with a gallery for spectators at one end. It will be fitted with spray baths, dressing-rooms, &c. Over the gymnasium will be the Victoria Hall, 56 ft. long, 34 ft. wide, and about 26 ft. high, to be used for public meetings. Messrs. J. T. Tomlinson & Co., of Derby, are the builders.

SANITARY AND ENGINEERING NEWS.

Aberdeen Water Supply.—On the 19th inst. the Aberdeen Town Council had before them a report by a committee as to the propriety of providing for increased storage and additional filter-beds at Invercannie in connexion with the Corporation waterworks. The construction was recommended of an additional storage or settling reservoir at Invercannie, capable of holding about 35,000,000 gallons, with six new filter-beds. The cost of the land and works was estimated at 67,000*l.*, which includes the site of a second storage reservoir to be constructed when the consumption has further increased. Before coming to any conclusion on the scheme, the committee recommended that the report should be remitted back to them for further consideration, with instructions and power to consult a professional engineer on the subject dealt with, and generally as to the whole question of the water supply for the city. The committee further suggested that they should be empowered to institute proceedings for preventing the contamination of the Dee by the discharge of sewage at certain villages. An amendment was proposed that the whole question should be left over for the consideration of the new Council, but this was negatived by 20 to 2 votes, and the report was adopted.—*Scotsman.*

Sewage Disposal, Alnwick. — The Alnwick Local Board of Health have instructed Mr. D. Balfour, M.Inst.C.E., Newcastle-on-Tyne, to report on a scheme of sewage disposal for the town of Alnwick.

Kegworth Sewerage.—A Local Government Board inquiry was held on the 21st inst., at Kegworth, by Major-General Carey, R.E., with respect to an application for sanction to borrow 5,000*l.* for sewerage and sewage disposal purposes. Mr. W. H. Radford, C.E., of Nottingham, is the engineer for the scheme and he explained the plans. It is proposed to conduct new pipe-sewers to deliver the sewage by gravitation to the sewage disposal site, where it would be pumped a lift of about 12 ft., and purified by broad irrigation on eight acres of suitable land.

Opening of New Kelvin Bridge, Glasgow.—On the 20th ult. the last stone of the new bridge over the Kelvin at Great Western-road, Glasgow, was laid, and the structure formally opened for traffic, by the Lord Provost of Glasgow. The bridge forms the connexion between the city of Glasgow and the burgh of Hillhead, and altogether it has cost 45,000*l.* The bridge consists of four arches, two of 91 ft. each across the river Kelvin, and two land arches of 34 ft. each. There are thus three piers, which are of stone, the abutments and wing walls being faced with grey granite from the Kemnay quarries, while the pilasters are of red polished granite from the Corrennie quarries, and are capped with grey granite lamp-towers carried on corbelled and enriched necks. The arches themselves are of iron, with geometric tracery in the spandrels, and there are also open iron parapets. The width of the bridge, the platform of which is of steel, is 60 ft. The carriage-way is 36 ft. wide, is paved with granite, and has two lines of tramway rails; and the pavements are laid with granolithic material, and are each 12 ft. wide. The engineers of the bridge were Messrs. Bell & Miller, Glasgow; the contractors for the mason-work being Messrs. Morrison & Mason, Glasgow; and for the iron and steel work, Messrs. W. Arrol & Co., Glasgow.

FOREIGN AND COLONIAL.

France.—M. Henri Roujon, chef du bureau in the department of Public Instruction, has been appointed Directeur des Beaux-Arts in place of M. Larroumet. The Parisian press is unanimous in applauding the selection of this rather young director, who is nevertheless an accomplished writer and an enlightened critic of art. The new Secretary to the Fine Arts department is M. Oudinot, son of the painter who died last year. —— The Prefect of the Seine opened last Sunday the new Mairies at Perreux, near Nogent-sur-Marne, and at Vincennes. —— The administration of Museums has placed in the garden of the Luxembourg various works purchased in the recent Salons, especially "Les Joies de la Famille" by M. Daillion; "Au But," by M. Boucher; "Œdipe et Antigone," by M. Hughes; and "Après le Combat," by M. Levasseur. —— M. Baumgart, former chef du bureau in the Department of Fine Arts, has been appointed Director of the Manufactory of Sèvres. M. Vogt, a distinguished chemist, joins him as scientific director. There was talk of appointing M. Bracquemond artistic director, but it is understood that he has declined.——The death is announced of M. Henry d'Escamps, a distinguished literary man and former Inspector of Fine Arts. He was a devoted archæologist, and it was he who drew the attention of Government to the value of the Campana collection, which was purchased for the Louvre.——The formation of a new square is in progress on the southern slope of the Butte Montmartre; artificial rocks are already appearing, and a cascade and other devices. The cascade will issue from an excavation on the summit of the hill, in front of the church of the Sacré Cœur, and will fall into a gulf which is being formed bordering the Rue Ronsard. The work will cost about a million francs.——The fine drawing exhibited at the Salon by M. Paulin, of "The Piscina of the Baths of Diocletian," has been presented to the Luxembourg. —— The work for bringing the waters of the Avre and the Vigne to Paris is being pushed forward actively. The aqueduct in the Department of the Eure is constructed for nearly a kilomètre in length, and all the works of derivation have been completed in the Forest of Dreux. It is expected that the water will be brought to Paris in May, 1893. ——A new Bourse de Commerce has just been inaugurated at Rennes.——The Minister of Public Instruction has just inaugurated at Amboise the large public schools recently built there.——A competition has been opened at Nantes for a museum of painting and sculpture. The designs are to be sent in before February 1 next, and the cost is to be about 1,500,000 francs. —— The Municipal Council of Dôle (Jura) is about to erect a monument to the memory of Jules Grévy.——M. Pujol is to design the architectural portion of the monument commemorating the union of Savoy with France. It will be a pedestal 2·60 mètres high, with the escutcheons of the annexed provinces; this will be surmounted by a statue representing Savoy, four mètres in height, commissioned from M. Falguière. ——The Municipality of Amboise have restored the fine Hôtel de Ville of this ancient city. This building, classed among the "monuments historiques" of France, was commenced in 1505. M. de la Roque was the architect for the restoration, which has been carried on for ten years past, and has cost 300,000 francs.*

Berlin.—Professor Kekulé, the curator of the Royal Museums of Berlin, has left town on a trip to Asia Minor, where he has already met Hamdi Bey, curator of the Museums at Constantinople, and several members of the German Archæological Institute at Athens. It appears that the party intend starting for Magnesia, where some extensive excavations are to be made at the expense of the German Government. After the preliminary works have been taken in hand, Professor Kekulé will, together with Hamdi Bey, go on to Miletus.——The usual annual list of reports sent in to the Ministry by the technical attachés attached to the various German Embassies has been published in the *Centralblatt d. Bauverwaltung.* It appears that whilst there are attachés in Paris, Vienna, St. Petersburg, Rome, and Washington, there is no such technical representative at the London Embassy.——The newly-formed (or rather reconstructed) architectural society, the "Vereinigung Berliner Architekten," has just closed its first session, which has been a most successful one. The

* Alas! after all that expenditure how much is left of the ancient Hôtel de Ville?—Ed.

COMPETITION, CONTRACTS, AND PUBLIC APPOINTMENTS.

COMPETITION.

Nature of Work.	By whom Advertised	Premium.	Designs to be delivered.
*Designs for Lunatic Asylum	Sunderland Lunatic Asylum Com.	100*l.* 75*l.* and 50*l.*	No date

CONTRACTS.

Nature of Work or Materials.	By whom Required.	Architect, Surveyor, or Engineer.	Tenders to be delivered.
*Reading and Library Rooms at Blaengarw	International Colliery Offices	.....	Oct. 31
*Collection of Trade Refuse, Manure, &c.	Chelsea Vestry	*Official*	Nov. 3
*(1) Making-up Road (2) Pipe Sewer	Tottenham Loc. Bd.	J. E. Worth	do.
Lavatories and Buildings	Warrington Union	Wm. Owen	do.
Main Outfall Sewers	Alnwick and Canongate Loc. Bd.	G. Wilson	do.
Waterworks (Laying Pipes, &c.)	Northallerton Loc. Bd.	A. M. Fowler	Nov. 4
Wood Paving	Bristol U.S.A.	T. H. Yabbicom	do.
Supplying and Laying Pipes, &c. Glenisla Distillery, Keith, N.B.	.....	Gordon & McBey	do.
Making-up Connaught-avenue	Plymouth Corp.	G. D. Bellamy	Nov. 5
Alterations to Police Buildings, Cranston-street	Glasgow Police Comrs.	*Official*	do.
Firemen's Quarters and Library Fittings, Longsight Mechanics' Institute	Manchester Corp.	do.	Nov. 6
*Concrete Engine Bed and Foundations	Widnes Local Board	J. Carr	do.
Wrought-iron Girder Work (400 tons)	M. S. & L. Ry. Co.	*Official*	do.
*Road Works, Ovingdean	The Committee	.....	Nov. 7
*Purchase of Guernsey Granite	Sandwich U.S.A.	*Official*	do.
*Repair of Private Road	Croydon Council	do.	Nov. 10
*Swimming Bath	St. James' (Westminster) Parish Comms.	Spalding & Cross	Nov. 11
Assembly Rooms, Shops, and Premises	Hanbury (Mon.) Assembly Rooms Co. Lim.	E. A. Lansdowne	do.

CONTRACTS.—*Continued.*

Nature of Work or Materials.	By whom Required.	Architect, Surveyor or Engineer.	Tenders to be delivered.
*Broken Granite	Maidenhead T. C.	*Official*	Nov. 11
*Guernsey Granite and York Paving	Gravesend T. C	do.	Nov. 12
*Underground Urinals, Lothbury	Commrs. of Sewers	do.	Nov. 13
*Construction of Lock	Barry Railway Co.	J. W. Barry	Nov. 14
*Purchase of Wrought-iron Fireguards	Met. Asy. Bd.	*Official*	Nov. 16
Engines and Pumps, Sewage Works	Southampton Corp.	W. B. G. Bennett	do.
*Coastguard's Station, &c. West Looe	Admiralty	*Official*	Nov. 17
*Various Works, Newcastle-on-Tyne	N. E. Ry.	W. Bell	Nov. 18
*Pipe Sewers with Manholes, &c	Bexley Local Board	A. Williams & Son	Nov. 24
*Coastguard Station, Peterhead	Admiralty	*Official*	do.
*New Pier Head, Band Stand, &c.	Clevedon Local Board	G. N. Abernethy	Nov. 30
*Superstructure of New Buildings	Dorset County Asylum	G. T. Hine	Dec. 2
*Taking-down Woolpack-inn, Walsall, and Erection of New Buildings	Robinson's Brewery Co	S. Loxton	No date
*County Offices, Winchester	Southampton County	Jas. Robinson	do
Sewerage Works, Allen Estate, Wallsend		S. Oswald & Son	do.
Corn Warehouse, Dunston, Northumberland	.....	Oliver & Leeson	do.
New Premises, Edgware-road, Newcastle-on-Tyne	Farmers & Cleveland Dairies Co. Lim.	do.	do.
Road-making and Fencing	Northampton Corp.	*Official*	do.
New Vestry. Re-seating, &c. St. Swithin's Church, Baumber, near Horncastle	.....	Wm. Scorer	do.
Additions to School, Newarthill	Bothwell Parish Sch.B.	Bruce & Hay	do.
House and Shop, My Lady's-road, Belfast	.....	T. M'Candless	do.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Applications to be in.
*Building Inspector	Willesden Loc. Bd.	150*l.*	Nov. 2
*Surveyor	Friern Barnet L. B.	150*l.*	do.

Those marked with an Asterisk (*) are advertised in this Number. *Competition*, p. iv. *Contracts*, pp. iv., vi., *and* viii. *Public Appointments*, p. xx.

number of members has risen to 118. The presidency for the next year remains in the hands of Herr von der Hude.——In again referring to the electric lighting of Berlin, we notice a great increase in the number of lights used. The number of arc lights has now reached 4,944, to 3,778 last year; and the number of incandescent lights, 80,778, to 62,876. The different central works supply current to 1,166 arc lights and 17,912 incandescent lights; the rest are supplied with their current from some 260 private works.

SWITZERLAND.—A competition has been opened for a Tell Monument, to be erected on the historical market-place at Altdorf. Owing to the popularity of the subject, the competition is expected to be a good one. The models, to be sent in March 1, one-fifth the intended size, are to show Tell's figure some 3 mètres in height, the bronze statue standing on a granite pedestal. The prizes offered are 2,500f., 1,500f., 1,000f., and 500f.——Basle is to have a large municipal library. A competition has been opened some time back, and designs were sent in on the 15th inst.

SWEDEN.—The Building Board of the City of Stockholm has now approved the designs and plans for the new Academy of Arts to be erected in the Swedish capital, as prepared by the architect, Herr E. Lallerstedt. In the competition for the designs this gentleman took the first prize.——As it has been found impossible to complete the work of restoration of the Cathedral of Skara with the funds at disposal, a petition is to be presented to the next Riksdag, asking for State aid for the work.——The new building regulations for the city of Stockholm are being vigorously enforced. As an example it may be mentioned that the other day a builder was fined 20*l.* for having departed from plans approved by the Building Board, the offence consisting in his having covered over the courtyard and arranged some rooms in the loft.

BRISBANE, QUEENSLAND.—The *Brisbane Courier* of September 15 announces that the amalgamation of the offices of Engineer for Bridges and Colonial Architect, which was decided upon some time ago, has been effected, and that Mr. Alfred B. Brady, who was appointed to the joint offices, has commenced duty. Mr. Brady was appointed Engineer of Bridges on June 5, 1889. Before he left England he was in the engineering and architectural department of the Lancashire and Yorkshire Railway Company, where he served from 1871 to 1879.

MISCELLANEOUS.

ANOTHER FAWCETT MEMORIAL.—Sir Henry Doulton intends to present to the local authorities a memorial statue of the late Mr. Fawcett, to be erected in Vauxhall Park, on the site of Fawcett's house, lately demolished. The model for the work has been made by Mr. Tinworth. It shows Fawcett seated, with a winged female figure standing behind holding a wreath over his head. The work will be executed in terra-cotta.

GLASGOW ARCHITECTURAL ASSOCIATION.—The second lecture of the session of this Association was given on the 20th inst. by Mr. Thomas Mair, tile-layer, his subject being "Fireplaces." The President, Mr. William J. Anderson, occupied the chair. The proportionate dimensions of fireplaces in relation to the apartments they heat, and the fuel required to give in winter 60 degrees temperature, had been tabulated by Mr. Mair. All iron he would prefer to see give place to tiles, as better radiators of heat. Flues in general, he thought, were built too small. The customary vote of thanks was awarded to the lecturer at the close.

CHICAGO EXHIBITION, 1893.—A meeting of the Royal Commission was held at the Society of Arts, John-street, Adelphi, on Wednesday afternoon, 21st inst., to receive the report of Mr. James Dredge and Sir Henry Trueman Wood on the result of their visit to Chicago. Present: The Attorney-General, M.P., in the chair; Sir Frederick Abel, K.C.B., F.R.S.; Sir George Birdwood, K.C.I.E., C.S.I., LL.D., M.D.; Major-General Sir Owen Tudor Burne, K.C.S.I., C.I.E.; Michael Carteighe; Lord Alfred S. Churchill; Sir Philip Cunliffe-Owen, K.C.B., K.C.M.G., C.I.E.; Major-General J. F. D. Donnelly, C.B.; James Dredge; Francis Elgar, LL.D.; Sir Douglas Galton, K.C.B., D.C.L., F.R.S.; C. M. Kennedy, C.B.; John Biddulph Martin; George Matthey, F.R.S.; Wyndham S. Portal; W. H. Preece, F.R.S.; Sir Owen Roberts, M.A., F.S.A.; Prof. W. C. Roberts-Austen, C.B., F.R.S.; with Sir Henry Trueman Wood, Secretary. The report was received, and ordered to be printed, thanks having been voted to the authors. The Commission considered and approved a form of circular to exhibitors, which was ordered to be issued. They decided to appoint the following Committees:—Finance, Fine Arts, Indian, Colonial, Engineering, General Manufactures, Electricity, Agriculture, Mines and Metallurgy, Textile Industries, Science and Education, Transportation; also a Committee of Ladies to correspond with the Ladies' Committee at Chicago. They further decided to invite the assistance of Chambers of Commerce as Local Committees.

ARCHÆOLOGICAL DISCOVERIES IN RUSSIA.—According to the *Novoye Vremya*, archæological researches, carried on for some time at the Prince's Mountain, near Kaneff, in the government of Kjeff, have resulted in valuable discoveries. At first, only objects of the Stone Age were found; but as the excavations proceeded, over a thousand objects of the Iron Age have been brought to light, consisting of hunting implements and fishing gear; weapons, such as arrow-heads, spears, and swords, small and large crosses, the effigy of a god carved in stone, &c. These were mingled with objects of a more modern period, ear-rings of silver, iron, and glass, pearls and armlets of glass, one of the latter being twisted, and bearing an Arabic inscription. Quite recently, however, a still more important and valuable find has been made, viz., a silver treasury, from the so-called Grand Ducal period (prior to the unification of Russia), consisting of female ornaments of all kinds, among them being some showing black enamelling and having a perforated pattern. There was also found five hexagonal silver bars,—the moneys of the age,—of the Kjeff type, and weighing 1 lb. each. The discoveries are causing great interest in Russian archæological circles.

A TURKISH INDUSTRIAL AND COMMERCIAL SAMPLE OFFICE.—According to a circular issued by the Ottoman Government, it is in contemplation to establish an industrial and commercial sample office in Constantinople, in order to develop Turkish crafts and commerce. There are to be two sections, one for native and one for foreign produce imported by Turkey, besides a bureau affording information desired by manufacturers. The costs of the undertaking are to be borne by the exhibitors. It is hoped that the office will be established next year.

ELECTRIC LIGHTING.—"*Lightning*" is the name of a new weekly "popular and business review of electricity." It is published at Faraday House, Charing Cross-road, E.C., and the first number appeared on October 22.——The *American Gas-Light Journal* for October 5 contains an interesting paper by Mr. J. L. Ayer entitled "Some Details of the Care and Management of an Arc Lighting System as Practised in the 'Municipal' of St. Louis, Mo."——The Finchley Local Board instructed their engineer and surveyor, Mr. F. Smythe, to prepare a report upon the lighting of their district by electricity. This report was submitted to them in June last. At a meeting of the Board on the 27th inst. it was resolved:—"That their clerk issue the statutory notices, and make an application for a Provisional Order during the next session of Parliament for powers for lighting their district by electricity." In his report, Mr. Smythe recommends the transformer system, with an alternating current, as best suited to the requirements of the district, and estimates the cost at 19,000*l.*

"A. A." LYRIC CLUB.—The fourth season of this club was inaugurated by a smoking concert, held at the headquarters, the "Mona Hotel," Covent Garden, on the 23rd inst. The programme arranged by the President, Mr. A. C. Palmer Booth, was most successfully carried out. Messrs. Booth, Hunter, Smith, Perks, and Captain Watson contributing songs, and Messrs. F. T. W. Miller and Perks recitations. Mr. C. D. Imhoff again proved a most efficient accompanist. The next concert takes place on November 20, and will be arranged by Mr. Earle, who promises a performance of the "A. A." string band, and other special items.

PRESENTATION TO A BUILDER AT HOVE.—The *Sussex Daily News* of Monday last says that the *employés* of Mr. S. C. Smale, builder, at a dinner at the "Neptune" Inn, Hove, on Friday evening, presented their employer with a testimonial. About forty sat down to dinner.—After dinner Mr. H. Mew made the presentation, which consisted of two bronze statuettes. In a few appropriate words, he expressed the regard and esteem in which Mr. Smale was held by his workmen, not only as an employer, but as a friend, and hoped he would be spared many years.—Mr. Smale, in reply, said it gave him great pleasure to know that he was held in such esteem by his men. He always tried to do his best for them, and would always do so. He had worked as a foreman, and knew that the best way to treat his men was by kindness and not bullying. When he became a builder for himself, he made up his mind to carry out the same principle, and the results, as the present proved, had been most gratifying. He thanked them one and all for their kindness, and hoped to have the same faces around him for years to come.

EXPLORATIONS AT CARDIFF CASTLE.—Considerable progress has been made with excavations now being carried out for the Marquis of Bute, under the superintendence of Messrs. Kempson & Fowler, of Llandaff, on the site of the old Blackfriars Monastery, which is within the grounds at Cardiff Castle. Many parts of the old foundations have been traced, a piece of the original consecrated altar slab has been found, also many interesting fragments of tombs, pieces of worked stone, glass, tiles, &c., all of which are being carefully preserved.

THE ENGLISH IRON TRADE.—The English iron market presents few features of encouragement. The Glasgow warrant market remains inactive. The Cleveland iron market is dull, and prices are receding. The hematite iron trade of the north-west is still sluggish. Manufactured iron experiences a fair inquiry; but steel in the north-west is inanimate, and quotations have again fallen. Scotch and North of England steelworks, however,

are fairly well booked. The tinplate market remains quiet. The shipbuilding trade is quieter. In engineering, the chief feature is the threatened strike on the north-east coast, which would affect other industries. Lancashire engineers are slacker; but Scotch engineers are fairly well employed. The coal trade is moderately active.—*Iron.*

HARTLEPOOL BATHS.—In reference to our paragraph about these last week, we may add that we received a letter from Messrs. Constantine & Son, after last week's paper had gone to press, saying that they had made no proposition to take the duty of architect; on the contrary they wished an architect to be engaged, but the directors refused, only giving way so far as to appoint a superintending architect for the erection of the building, as Messrs. Constantine declined the responsibility.

POPULAR LECTURES AT THE ROYAL VICTORIA HALL, WATERLOO-ROAD.—The following arrangements have been made for science lectures at the above hall:—November 3—Mr. F. W. Rudler, on "Some very Ancient Britons." November 10—Dr. Rideal, on "London Fogs." November 17—Dr. W. D. Halliburton, on "Skin and Bones" (second lecture). November 24—Rev. C. E. Brooke, on "A Holiday in the Far West."

ALTAR-PIECE, ST. AGNES, KENNINGTON-PARK.—A new reredos has been recently dedicated in this church. It is in the form of a triptych. This is one of the most effective and picturesque shapes which the retabulum or altar-piece assumed during the Middle Ages, and was common in England, as we learn from the "Rites of Durham" and other early authorities. Those in the great churches of Flanders and North Germany are known to all travellers. Painters as famous as Van Eyck and Rubens were engaged upon the adornment of this form of reredos. The earlier specimens are mostly of sculptured imagery, decorated elaborately in gold and colour. The triptych now erected at St. Agnes's is of considerable size, rising to the height of about 20 ft. from the floor-line, and extending, when the shutters or wings are opened, to about the same width. It contains in the centre a sculptured group representing the Annunciation and a series of eighteen single figures of the Apostles and other saints; above, on small brackets, are a series of eleven images representing bishops who in their day presided over the See of Rochester. The side wings swing on hinges and are plain on the back. When these are closed during Lent (and at other penitential times) nothing will be seen of the richly-carved interior. The outsides of such altar-pieces were in the Middle Ages generally decorated in a grisaille, and if any painting is applied to these portions of the St. Agnes retabulum it will probably be carried out in the traditional manner. The system of coloured decoration on the front of the altar is still under consideration. The canopy is the translation of a Flemish sixteenth-century example into the style of the English fourteenth century. This reredos has been executed, as well as the woodwork generally throughout the church, by Mr. J. Elwell, of Beverley, and the sculptured figures by Messrs. Farmer & Brindley. The architect is Mr. G. Gilbert Scott, M.A., and Mr. T. L. Moore has largely assisted in the details in the general superintendence of the work.

TELEPHONE BETWEEN VIENNA AND BERLIN.—The Austrian and German Governments have agreed to establish shortly telephonic communication between Vienna and Berlin. This will be effected by laying a wire between Zittau, in Saxony, and Reichenberg, in Northern Bohemia, the former place being already connected with Berlin by telephone, and the latter will soon be connected with Vienna *vid* Prague.

THE TELEPHONE IN AUSTRIA.—An agreement has been come to between the Telephone Company of Austria and the Crown, whereby the latter will take over from the end of next year all lines owned by this company.

MEETINGS.

MONDAY, NOVEMBER 2.

Royal Institute of British Architects.—The opening address of the session will be delivered by the President, Mr. J. Macvicar Anderson. 8 p.m.

Society of Engineers.—Mr. J. H. Paul, B.Sc., on "Corrosion in Steam Boilers." 7.30 p.m.

TUESDAY, NOVEMBER 3.

Sanitary Institute (Lectures for Sanitary Officers).—Mr. Shirley F. Murphy on "Infectious Diseases and Methods of Disinfection." 8 p.m.

Glasgow Architectural Association.—Mr. L. Douglas Penman on "The Stones of Venice." 8 p.m.

WEDNESDAY, NOVEMBER 4.

London Society for the Extension of University Teaching (Chelsea Centre).—Mr. A. H. Fison, D.Sc., on "Electricity and its Modern Applications." V. 8.15 p.m.

Dundee Institute of Architecture.—Professor Baldwin Brown, M.A., on the "Growth of Cities." 8 p.m.

THURSDAY, NOVEMBER 5.

Royal Archæological Institute.—(1) The Rev. J. Hirst on "Guilds Amongst Anglo-Saxon Monasteries." (2) Mr. Osbert H. Howarth on "Prehistoric Stonework of Mexico." 4 p.m.

FRIDAY, NOVEMBER 6.

Sanitary Institute (Lectures for Sanitary Officers).—Mr. J. F. J. Sykes on "General Powers and Duties of Inspectors of Nuisances." 8 p.m.

RECENT PATENTS:

ABSTRACTS OF SPECIFICATIONS.

15,556.—VENTILATING: *W. R. McDonald.*—The ventilator which is the subject of this patent takes the form of an air-tight cabinet, with an air inlet and means for warming the air, purifying it, or charging it with antiseptics or medicaments; and provision is also made for drawing off the vitiated air from the apartments.

19,537.—VENTILATORS: *J. D. G. Thompson.*—By the arrangement of the outer guards of the ventilator, consisting of four concave plates placed in a circle at equal distances apart, the wind currents are deflected into two openings between them upon one or more of four slightly-curved angle plates, by which they are divided and carried round inside the outer guards over convex deflecting plates and on to other slightly curved plates, and then forced out through the opening between the outer guard plates on the opposite side.

17,465.—PREVENTING MOISTURE ON SHOP WINDOWS: *G. C. Inkpen.*—This patent refers to an arrangement of ventilating gratings, tubes, &c., bringing in a current of cold air from the outside and distributing it on the inside by means of partitions, &c., then withdrawing from the top and passing it away by a cowl, causing always a current of air to be diffused near the glass, preventing the condensation of moisture on its surface.

12,050.—WINDOW-SASHES: *H. Culpin.*—According to this invention, a movable side-strip with a turn-table device for locking the sashes, and a hinged flap, are the principal means of securing thorough ventilation and security in reversible window-sashes.

12,219.—COMPOSITION FOR PLASTERING WALLS: *W. J. Regan.*—The composition referred to is made in slabs or is applied as plaster to walls, and is made of 75 per cent. soapstone, 25 per cent. plaster, and a vegetable or animal fibre thoroughly interspersed in the mass.

13,813.—CUTTING CLAY FOR BRICKS: *E. Stern.*—A cutter with two series of wires, arranged to work on the same planes towards the centre of the stream of clay, but not passing one another, is used for the purpose of dividing the clay cleaner and with greater certainty.

14,412.—CENTRE HINGE: *J. Liddle.*—This invention consists in a pivot, or centre hinge, made in two parts, one of which is hollow, and forms a tube or sleeve, whilst the other has a projecting pin to fit the sleeve, the upper surface of which is made with a spiral plane, bearing the correspondingly inclined under surface of a shoulder, extending downward from a socket into which the pin is fitted.

NEW APPLICATIONS FOR PATENTS.

October 12.—17,336, F. Barker, Ventilators.—17,361, J. Knox, Wooden Ladders.—17,365, W. Reynor, Securing Window-sashes and Lifting same, also Closing.—17,375, W. Errington, Automatic Stone-cutting and Stone-dressing Machinery.—17,377, W. Taylor, Sand Moulding Brick Machines.

October 13.—17,389, R. Roderick, Gaseliers, &c.—17,398, J. Lilly, Raising and Lowering Fanlights, &c.—17,404, A. Haslam, Domestic and other analogous Fireplaces or Grates.—17,431, J. and J. Platts, Spring Hinges.—17,443, W. Goodman, Marbled Glass.—17,466, T. Lee, Fireproof Floors and Roofs.—17,469, E. Chrisfield, Brick-moulding Machines.

October 14.—17,484, F. Bardall, Window-fastenings.—17,497, J. Davies, Portable Excavating Apparatus for use in Laying Gas, Water, and other Pipes, for Cutting Sewers, Drains, Ditches, Foundations, &c.—17,507, J. McHardy and W. Garland, Sharpening Edge Tools.—17,556, C. Cancellieri, Paving, &c.

October 15.—17,568, W. Hallsworth, Guards for Circular-saws and other dangerous parts of machinery.—17,576, S. Dix, Flushing of Water-closets.—17,592, A. Hewitt, Fastenings for Hinged Windows, &c.—17,594, A. Rosebrugh, Window and Window-ventilators.—17,619, S. Handscombe and W. Smith, Grinding-stones for cement, &c.—17,632, E. Edwards, Artificial Stone.—17,653, N. Sorensen, Locks for Doors.

October 16.—17,672, J. & A. Duckett, Water-closets.—17,695, T. Newton, Drain-pipe.—17,715, W. Kenny, Butt-joints or hinges.—17,722, C. Griffiths, Ventilators.—17,729, J. Martindale, Stencils.—17,740, G. Sloan, Sash-fasteners.

October 17.—17,768, J. & A. Duckett, Bricks and Tiles, applicable for paving roadways, &c.—17,772, J. Markmann, Wood Pavements.—17,774, T. & K. Hadfield, Fire-grates.—17,802, W. Wooler, Interlocking roofing-tiles, having the appearance of flat tiles.—17,820, J. Purdon, Wood-screws.

PROVISIONAL SPECIFICATIONS ACCEPTED.

15,300, M. & E. Woolley, Screws.—15,461, H. Millar & W. Thomson, Device for Excluding Draughts, applicable to Doors, Casement Windows, &c.—15,550, G. Paley, Siphon Feed for supplying water to Water-closets.—15,821, T. Pickeys & J. Birtwistle, Machinery for Cutting Wood.—15,940, A. Mitchell, Balustrades or Banisters.—16,105, J. Kearton, Sash-fastener.—16,164, J. Wedderburn, Locks and Bolts for Fastening Doors, Gates, and for similar purposes.—16,230, H. Ratcliffe, Decorative or Ornamental Wallings, Ceilings, &c.—16,929, J. Lewis, Metal Window-sashes or Frames.

COMPLETE SPECIFICATIONS ACCEPTED.

Open to Opposition for Two Months.

16 510, J. Wood, Preventing the escape of smoke from Chimneys.—13,236, L. Cormerois, Suspension Bridges.—13,957, J. Davis, Flush Hinges.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

OCTOBER 15.—By *Worsfold & Hayward* (at Dover): 2, St. Martin's-ter., Dover, u.t. 33 yrs., g.r. 2*l.*, 510*l.*; 62, High-st., Charlton, f., 420*l.*; 5 and 6, Bowling Green-l., f., 205*l.*—By *D. Smith, Son, & Oakley* (at Plymouth): The Salcombe Estate, &c., South Devon:—"Furzedown Farm," Salcombe, containing 96a. 2r. 27p., f., 1,990*l.*; "Bolberry Farm," containing 430a 3r. 23p., f., 8,750*l.*; "Burton Farm," 197a. 1r. 17p., "Glampton and Home Pk. Farms," 162a. 3r. 5p., f.g.r. of 5*l.*, and a plot of land, 1a. 3r. 21p., 10,000*l.*; "Court Barton Farm," 188a. 2r. 22p., f., 5,000*l.*; "Ilton Castle Farm," 326a. 0r. 14p., 6,500*l.*; "Churchill Farm," 107a. 2r. 9p., 3,350*l.*; "Higher Collaton and Collaton Farms," 71a. 1r. 0p., 2,200*l.*; "Lower Collaton Farm," 60a. 1r. 10p., 1,600*l.*; "Beadon and West Batsonhall Farms," 189a. 1r. 33p., 5,820*l.*; A small homestead of 9a. 2r. 30p., 1,150*l.*; The Manor of Saicombe with its rights, &c., 35*l.*; "The Shipwright's Arms," f., r. 19*l.* 10s., 440*l.*; "The Marine Hotel," and 1a. 3r. 13p., 2,900*l.*; "The Hope and Anchor Inn," and 5a. 1r. 32p., 680*l.*; "South Huish Farm," 293a. 3r. 34p., r. 390*l.*, 7,400*l.*; "The Sandhills" and 68a. 3r. 22p., numerous enclosures of Building Land, 61a. 0r. 17p. and Freehold Ground Rents, 16*l.* 15s., 13,000*l.*; a Cottage and 26a. 1r. 22p., r. 34*l.*, 750*l.*; a Cottage, two Orchards and 69a. 3r. 14p., 1,700*l.*; Freehold Ground Rents of 146*l.* 17s. 6d. per annum, 4,145*l.*; Numerous Enclosures of Land, 61a. 2r. 12p., 2,365*l.*; Numerous Cottages, Houses, and Garden Land, &c., 850*l.*

OCTOBER 19.—By *Messrs. Trollope*: The Pavilion erected in the Royal Naval Exhibition, Chelsea, 500*l.*—By *Graves & Son*: 18, Sutherland-pl., Bayswater, u.t. 55 yrs., g.r. 8*l.* 8s., r. 55*l.*, 560*l.*; 17, Paddington-st., Marylebone, sold before auction.—By *E. Smith & Co.*: The Freehold Residences, called "Furness and Netley," West End-lane, Hampstead, r. 130*l.*, 1,600*l.*; f.g.r. of 13*l.* per annum, 535*l.*

OCTOBER 20.—By *Norman & Bowen*: 1 to 4, Barbican-ct., Barbican, u.t. 29 yrs., g.r. 60*l.*, r. 192*l.*, 210*l.*; five f. cottages in Chapel-st., Nunnington, Yorkshire, 190*l.*—By *Weston & Son*: 54 to 60 even, Ingleton-st., Brixton, u.t. 12 yrs., g.r. 9*l.* 9s., r. 114*l.* 8s., 315*l.*—By *W. W. Jenkinson*: "The Golden Grove Sugar Estate," 2,294a., Jamaica, 15,570*l.*; "Nye's Wharf," Old Kent-road, u.t. 11 yrs., g.r. 25*l.*, 100*l.*—By *Debenham, Tewson, & Co.*: 12, Lismore-circus, Haverstock-hill, u.t. 72 yrs., no g.r., r. 26*l.*, 205*l.*

OCTOBER 21.—By *C. C. Taylor & Son*: No. 93, Mile-end-rd., u.t. 279 yrs., no g.r., r. 84*l.*, 1,500*l.*; 44, 46, and 48, Cyprus-rd., Bethnal-green, u.t. 11 yrs., g.r. 6*l.*, 285*l.*—By *S. Woodcock*: "Alexandra Villa," Hainault-rd., Leytonstone, u.t. 85 yrs., g.r. 5*l.*, r. 38*l.*, 490*l.*—By *Baxter, Payne, & Lepper*: A cottage and 2a. 2r. near Keston, f., 400*l.*; an enclosure of land, 3a. 2r., and buildings thereon, f., 375*l.*; two enclosures of f. land, 13a. 0r. 1p., 850*l.*—By *B. Brown*: 25, Stodart-rd., Anerley, f., 300*l.*; 147, East India Dock-rd., Poplar, u.t. 56 yrs., g.r. 7*l.* 16s., r. 46*l.*, 510*l.*; 5, 6, and 8, Plimsol-st., u.t. 56 yrs, g.r. 9*l.* 12s., r. 102*l.*, 765*l.*; 154 and 156, Grundy-st., u.t. 56 yrs., g.r. 6*l.*, r. 52*l.*, 330*l.*; 65, 66, and 67, Wapping-wall, f., r. 200*l.*, 2,500*l.*; 27 and 28, Wapping-wall, f., 400*l.*; 29, Wapping-wall, f., r. 22*l.* 2s., 210*l.*; 8 and 9, Monza-st., f., r. 31*l.* 4s., 155*l.*; 79 to 87 odd, Glengall-rd., Millwall, u.t. 52 yrs., g.r. 27*l.*, 1,200*l.*

OCTOBER 22.—By *C. C. & T. Moore*: 13 and 14, Ellerthorpe-st., Poplar, u.t. 52 yrs., g.r. 6*l.* 6s., 315*l.*; 6 and 7, Paris-ter., u.t. 74 yrs., g.r. 6*l.*, r. 54*l.* 12s., 420*l.*; 15 to 18, Godfrey-street, Stratford, u.t. 77 yrs., g.r. 6*l.* 10s., 320*l.*; 88, Tredegar-rd., Bow, u.t. 56 yrs., g.r. 4*l.* 10s., 330*l.*—By *Newbon & Co.*: 6, Denmark-hill, Wimbledon, f., r. 75*l.*, 820*l.*; 29, Myddleton-sq., Pentonville, u.t. 21 yrs., g.r. 10*l.*, r. 65*l.*, 315*l.*; 2 and 3, Compton-mews, Canonbury, u.t. 26 yrs., g.r. 7*l.* 15s., r. 15*l.*, 180*l.*; 117, Tavistock-cres., Westbourne Pk., u.t. 72 yrs., g.r. 8*l.*, 310*l.*—By *H. J. Bliss & Sons*: 178, Grove-rd., Bethnal-green, f., 715*l.*; 55, 57, and 59, Donald-st., Bromley-by-Bow, u.t. 41 yrs., g.r. 6*l.*, r. 37*l.*, 130*l.*; 78 and 80, Sussex-rd., Holloway, u.t. 59 yrs., g.r. 10*l.* 10s., r. 69*l.*, 665*l.*; 36, Forest-rd., Dalston, u.t. 12 yrs., g.r. 5*l.* 10s., r. 28*l.*, 105*l.*; a plot of freehold land, Forest-gate, 120*l.*; 14, Hamilton-rd., Bethnal-green, u.t. 36 yrs., gr. 3*l.*, 175*l.*

OCTOBER 23.—By *E. & S. Smith*: 5, Granville-sq., Clerkenwell, u.t. 35 yrs., g.r. 5*l.* 10s., r. 48*l.*, 400*l.*; Spa-cottages, i.g.r. of 32*l.*, u.t. 18 yrs., g.r. 24*l.*, 66*l.*—By *J. M. Klenck & Co.*: 1, Burlington-mews West, Bayswater, u.t. 68 yrs., g.r. 5*l.*, 225*l.*—By *Baker & Sons*: a freehold site, area 3,060 ft., Newington-butts, 5,400*l.*; 187, Albany-st., Regent's-pk., u.t. 24 yrs., g.r. 15*l.* 5s., r. 60*l.*, 320*l.*—By *Montagu & Robinson*: 86 to 92 even, Rommany-rd., Gipsy-hill, u.t. 80 yrs., g.r. 22*l.*, 330*l.*; 192 to 198 even, Rommany-rd., u.t. 78 yrs., g.r. 20*l.*, 340*l.*; 108 and 110, Winstanley-rd., Battersea, u.t. 76 yrs., g.r. 11*l.*, 160*l.*; 77 and 102, Winstanley-rd., u.t. 76 yrs., g.r. 7*l.* 10s., 360*l.*; 31 to 37 odd, Darien-rd., u.t. 77 yrs., g.r. 17*l.* 10s., 445*l.*; 184, Meyrick-rd., u.t. 57 yrs., g.r. 5*l.*, 190*l.*

[Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; e.r. for estimated rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; yd. for yard, &c.]

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Greenheart, B.G. ton	9/0/0	0/0/0
Teak, E.I... load	8/10/0	14/0/0
Sequoia, U.S. ft. cu.	2/3	3/0
Ash, Canada load	2/5/0	4/0/0
Birch, do.	2/10/0	4/5/0
Elm, do.	3/5/0	4/15/0
Fir, Dantsic, &c.	2/0/0	3/10/0
Oak, do.	2/10/0	4/10/0
Canada.....	4/17/6	6/10/0
Pine, Canada red	2/10/0	3/10/0
Do, yellow	2/0/0	3/0/0
Lath, D'ntsic, fath	5/0/0	6/0/0
St. Petersburg	5/0/0	7/0/0
Deals, Finland, 2nd & 1st std 100	8/0/0	10/10/0
Do, 4th & 3rd..	7/10/0	8/10/0
Do. Riga	6/10/0	8/0/0
St. Petersburg, 1st yellow ..	10/10/0	14/10/0
Do. 2nd yellow	8/10/0	9/10/0
Do. white	7/0/0	10/10/0
Swedish	7/10/0	15/10/0
White Sea	8/10/0	17/10/0
Canada, Pine 1st	13/0/0	25/0/0
Do. do. 2nd....	9/0/0	16/10/0
Do. do. 3rd, &c.	6/10/0	10/0/0
Do. Spruce. 1st	8/10/0	10/10/0
Do. do. 3rd & 2nd.....	6/0/0	7/15/0
New Brunswick	5/10/0	7/10/0
Battens, all kinds	3/10/0	15/10/0
Flooring Boards, sq., 1 in. prep. 1st	0/8/6	0/14/0
Do. 2nd.....	0/7/6	0/11/0
Other qualities	0/5/0	0/8/0
Cedar, Cuba ..ft.	/4	/4½
Honduras, &c.	/4	/4½
Mahogany, Cuba.	/4½	/0
St. Domingo, cargo av	/4½	/6½
Mexican do. do	/4	/5
Tobasco do. do	/5½	/7
Honduras do..	/5½	/6½
Box, Turkey ton	4/0/0	13/0/0
Rose, Rio.....	10/0/0	20/0/0
Bahia	9/0/0	18/0/0
Satin, St. Domingo . ....ft.	0/0/9	0/1/0
Satin, Porto Rico	0/0/10	0/1/6
Walnut, Italian..	0/0/3½	0/0/7

METALS.		
IRON—Pig, in Scotland .....ton	47/0/0	47/1/0
Bar, Welsh, in London.....	6/0/0	6/2/6
Do. do. at works in Wales	5/10/0	5/12/6
Do. Staffordshire, in London	6/10/0	6/15/0
COPPER—British, cake and ingot	51/10/0	53/0/0
Best selected ..	53/0/0	54/0/0
Sheets, strong..	62/0/0	63/0/0
Chili, bars	48/0/0	48/7/6
YELLOW METAL lb.	0/0/5 9-16	0/0/6
LEAD—Pig, Spanish ....ton	12/0/0	0/0/0
English, com. brands	12/2/6	0/0/0
Sheet, English, 3 lbs. per sq. ft. and upwards ..	14/5/0	0/0/0
Pipe	14/15/0	0/0/0
ZINC—English sheet .....ton	27/10/0	0/0/0
Vieille Montagne.....	28/0/0	0/0/0
TIN—Straits	90/12/6	91/0/0
Australian	90/12/6	91/0/0
English Ingots	94/0/0	94/10/0

OILS.		
Linseed .....ton	19/15/0	20/2/6
Cocoanut, Cochin	28/0/0	28/10/0
Do. Ceylon	24/15/0	0/0/0
Palm, Lagos	25/0/0	0/0/0
Rapeseed, English pale	30/10/0	0/0/0
Do. brown	29/0/0	0/0/0
Cottonseed ref...	19/15/0	0/0/0
Olcine	0/0/0	0/0/0
Lubricating, U.S.	4/10/0	5/10/0
Do. refined	6/0/0	11/0/0
TAR—Stockholm barrel	0/19/6	0/0/0
Archangel	0/12/0	0/12/6

TENDERS.

[Communications for insertion under this heading must reach us *not later than* 12 *noon on Thursdays.*]

BLACKPOOL.—Accepted for putting in the foundations for the Eiffel Tower, Blackpool. Messrs. Maxwell & Tuke, architects, 29, Princess-street, Manchester:—
Robert Neill & Sons, Manchester £2,447 0 0

EDMONTON.—For the erection of new entrance lodge and waiting-room, Millfield House Schools, Tanners End, Edmonton, for the Guardians of the Strand Union. Mr. W. S. Cross, architect:—

Austin & Son	£1,583 12 6	Godfrey	£1,194 0 0
Pabey	1,415 0 0	Coldwell	1,146 0 0
Groves	1,368 13 0	Pocock	1,133 0 0
Staines & Son	1 296 6 6	Webb	1,125 0 0
E. Houghton & Son	1,258 0 0	Chas. Wall	1,086 0 0
Emmitt	1,228 0 0		

EWELL (Surrey).—For alterations and additions to Tayles Hill, for Major Coates. Mr. C. E. Sayer, architect, 17, Scho-square, London:—

G. & A. Smith	£1,285	W. H. Simonds, Reading*	£1,282

* Accepted.

FRAMFIELD (Sussex). — For the erection of a new tower to Framfield Church. Mr. B. Edmund Ferrey, F.S.A., architect. Quantities by Messrs. Northcroft, Son, & Neighbour:—

S. Norman	£1,250	W. H. Lorden & Son,	
P. Peters	1,121	Upper Tooting*	£1,089

* Accepted.

FRAMFIELD (Sussex).—Accepted for works in the restoration of Framfield Church. Mr. B. Edmund Ferrey, F.S.A., architect. Quantities by Messrs. Northcroft, Son, & Neighbour:—
W. H. Lorden & Son £1,539 0 0
[No competition.]

HENDON.—For erecting a house at Holder's Hill, Hendon, for Mr. A. T. Nisbet. Messrs. Cooper & Goulding, architects:—

Ellis & Turner	£1,335 0	Brown	£1,098 0
Holloway Bros.	1,188 0	E. Houghton & Son,	
Grist	1,098 18	Stroud Green*	1,065 0

* Accepted.
[Architect's estimate, £1,117.]

HORNSEY.—For painting and repairing conservatories, &c., for Mr. H. R. Williams, "The Priory," Hornsey. Mr. E. J. Paine, architect:—

Rimmott & Son	£350 0 0	E. Houghton & Son	£237 18 6
Southcott	272 3 9		

LONDON.—For the enlargement of the Matthias-road school, Stoke Newington, by 379 places; and for erecting additional water-closets for boys, for the School Board for London. Mr. T. J. Bailey, Architect:—

		If brickwork be built in cement add,
Holloway Bros.	£3,243	£91
Atherton & Latta	6,178	90
C. Cox	6,086	100
Foster & Dicksee	5,915	60
G. S. S. Williams & Son	5,907	90
E. Lawrance & Sons	5,898	98
Lathey Bros.	5,748	112
W. Gregar & Son	5,641	46
W. Downs*	5,411	85
Treasure & Son	5,259†	75†

* This contract r adds:—"Subject to the award of arbitration, now pending, re carpenter's strike, not increasing wages as expected by the men."
† Recommended by the Works' Committee for acceptance.

LONDON.—For the erection of a school on the Blackwall-lane site, Greenwich Marshes, to provide accommodation for 805 children, for the School Board for London. Mr. T. J. Bailey, Architect:—

		If brickwork be built in cement add.
S. & W. Pattinson	£17,016	—
Foster & Dicksee	16,928	£372
W. H. Lorden & Son	16,651	460
Killby & Gayford	16,542	345
Holliday & Greenwood	16,421	312
E. Lawrance & Sons	16,081	325
T. Boyce	16,073	200
J. Marsland	15,410	110
Treasure & Son, Noel Park, N.	14,713*	250*

* Recommended by the Works Committee for acceptance.

LONDON.—For the erection of a cleft-oak boundary fence at Brockwell Park, Herne Hill, for the London County Council. Mr. Thomas Blashill, Architect:—

J. Stenning & Son	£496 0 0	M. Marshall*	£480 0 0
J. Agate	491 13 6		

* Accepted.

LONDON.—For repairs and alterations and additions to house in Brockwell Park, Herne Hill, for the London County Council. Mr. Thomas Blashill, Architect:—

J. J. Richards	£2 350	Jackson Bros.	£1,991
J. Frampton	2,100	T. Lapthorne & Co.*	1,896

* Accepted.

LONDON.—Accepted for sundry repairs, &c., to Nos. 79 and 80 Milton-street, E.C. Mr. Herbert Knight, architect, 129, Cheapside, E.C.:—
F. Prater £177 0 0

LONDON.—Accepted for the erection of a block of artisans' dwellings in Old Gravel-lane, Wapping. Mr. H. M. Eyton, architect:—
W. H. Lorden & Son, Upper Tooting £4,700 0 0
[No competition.]

LONDON.—Accepted for the erection of a warehouse in Meeting-house-alley, Wapping. Mr. H. M. Eyton, architect:—
W. H. Lorden & Son, Upper Tooting £800 0 0
[No competition.]

LONDON.—For pewtering work at "The Canton Arms," South Lambeth-road, S.E. Messrs Thorpe & Furniss, architects, 154, High-street, Camden Town, N.W.:—

Heath	£127 0 0	H. & F. Warne*	£109 9 0
Watts	126 17 6		

* Accepted.

LONDON.—For alterations and additions to the "Selbourne Tavern," Selbourne-road, Denmark-hill, Camberwell, S.E., for Mr. H. Cole. Mr. E. J. Strevens, architect, 246, Camberwell-road, S.E.:—

T. Whitehead & Co.	£725 0	Johnson & Manners	£527 0
J. H. Pugh	660 0	J. H. Watson	517 10
J. Garrett & Son	629 0	Courtney & Fairbairn	513 0
J. Ford & Sons	584 0	G. W. Ford (accepted)	508 0

LONDON.—For alterations at the City of London Infirmary, Bow, for the Guardians of the City of London Union:—

Mollett	£1,569	Jackson Bros.	£1,248
Harvey	1 432	Philips	1,199
Wood	1,370	Pearce & Co., Kingsland-road (accepted)	1,136
Cocks	1,299		

MANCHESTER.—Accepted for alterations to the Old National Provincial Bank, Manchester, for the Brasenose Club Committee. Messrs. Maxwell & Tuke, architects, 29, Princess-street, Manchester:—
Robert Neill & Sons, Manchester £1,523 0 0

SHEFFIELD.—For painting ironwork, &c., of bridges, fencing, &c., belonging to the Corporation of Sheffield, from quantities and specifications prepared by Mr. C. F. Wike, C.E., Borough Engineer:—

T. Beech	£292 4 2	C. Chadwick	£249 18 0
M. A. Topham	268 17 10	A. Machin	186 11 0
Smith & Snape	259 0 0	J. Puttrell & Co.*	163 0 0

* Accepted.

STOKE POGES (Bucks).—For alterations and additions to stables and lodge at Carton Tower, Stoke Poges, Bucks. Mr. J. M. Ferguson, architect, 55, Chancery-lane, W.C.:—

Silver & Sons	£218	Almond	£148
Hartley	170		

WOOD GREEN, N.—Accepted for the erection of extra billiard-room at "The Nightingale" Hotel, for Mr. J. Goscheron, Mr. John E. Pinder, architect and surveyor, Bridge House, South Tottenham:—
F. Voller £500 0 0
[No competition.]

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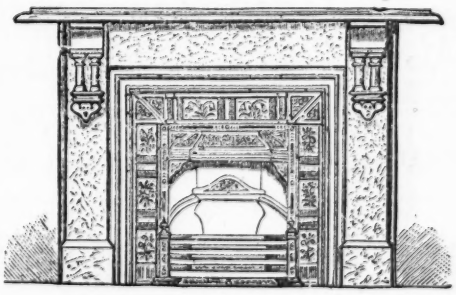

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1891 (I.–XII.) 1892. (XIII.–XVIII.)

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Further particulars as to duties, &c. may be obtained on application to me, at the above address.

G. DICKINSON BYFIELD,
Clerk to the Board.

October 8th, 1891.

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O. CLAUDE ROBSON,
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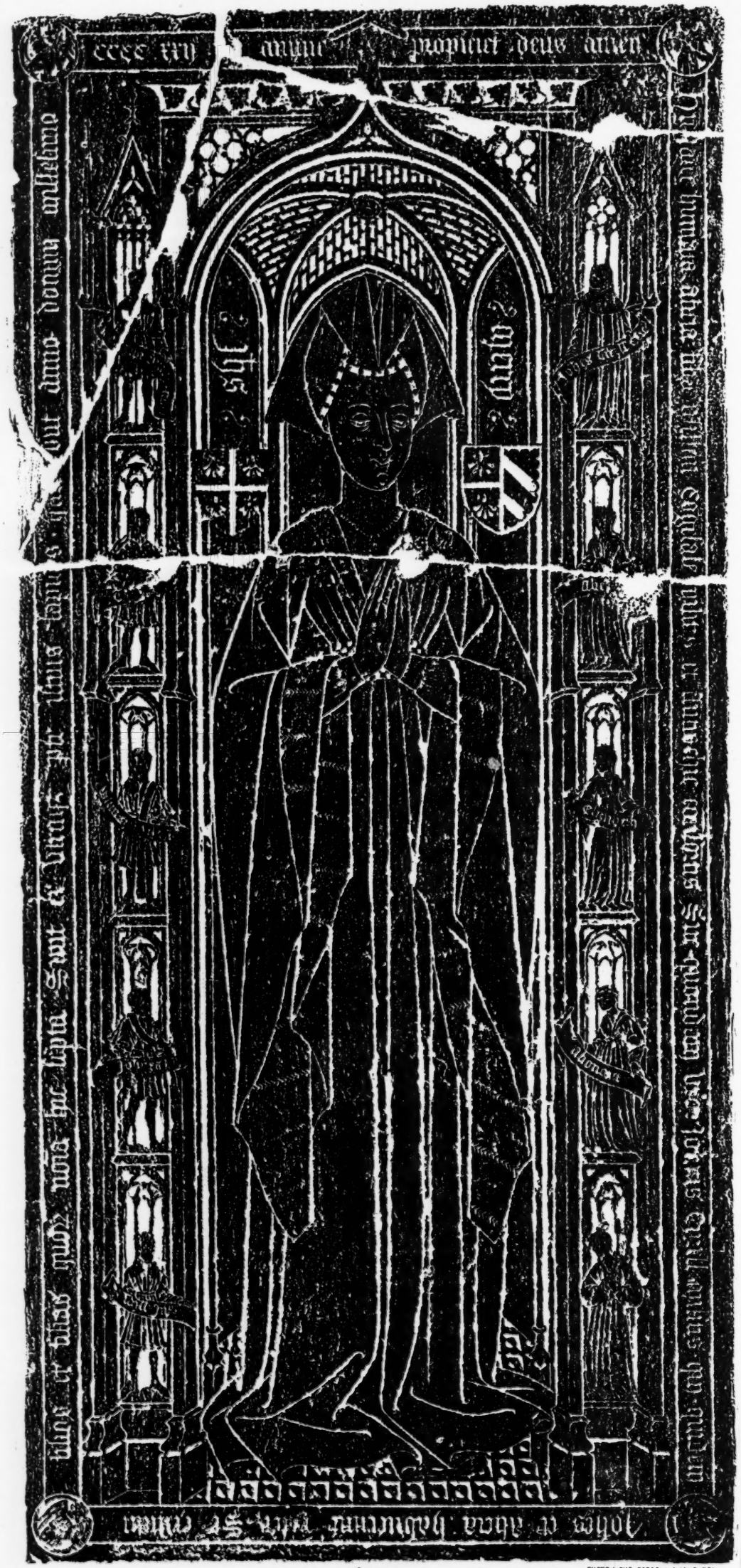

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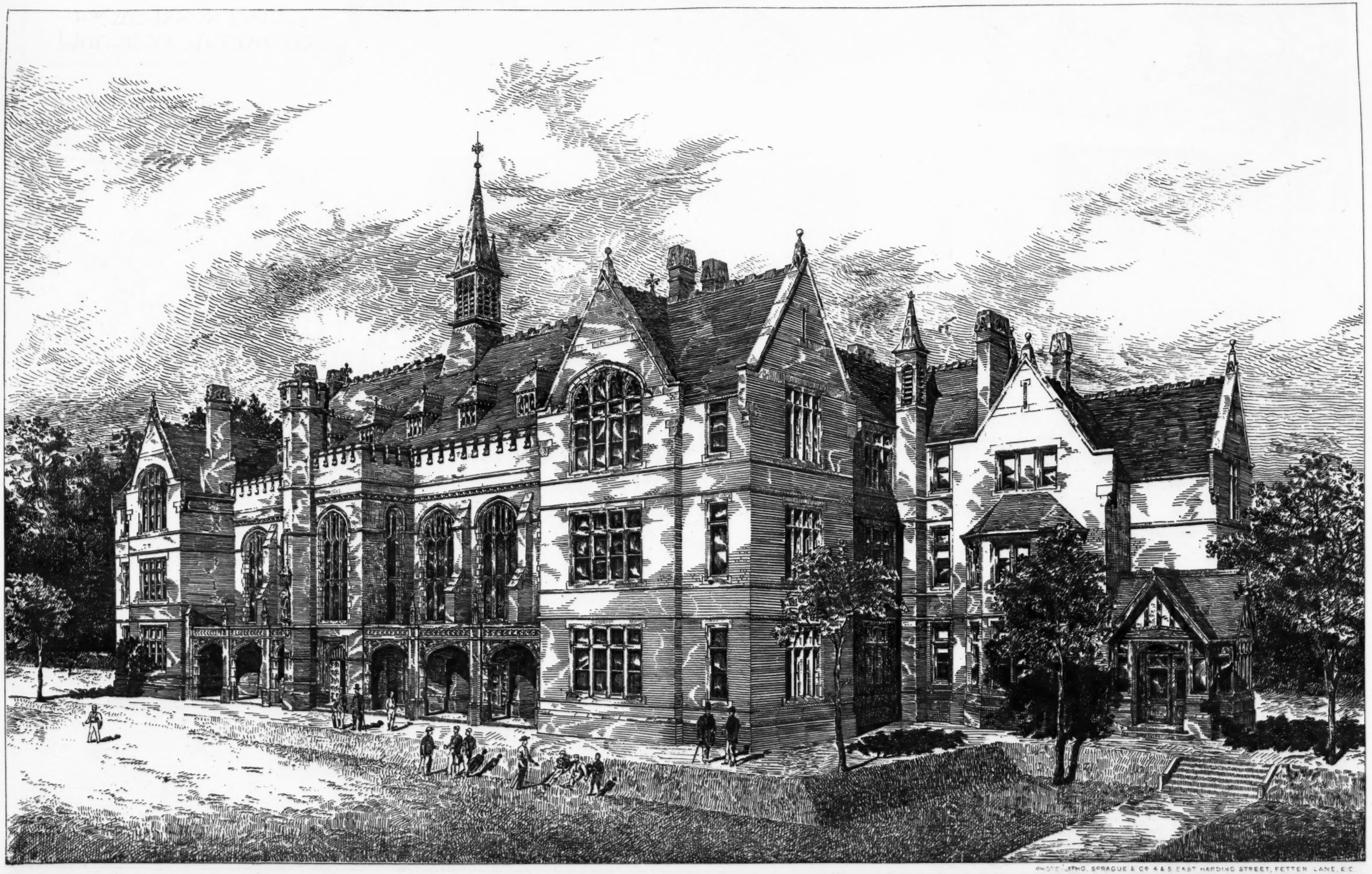

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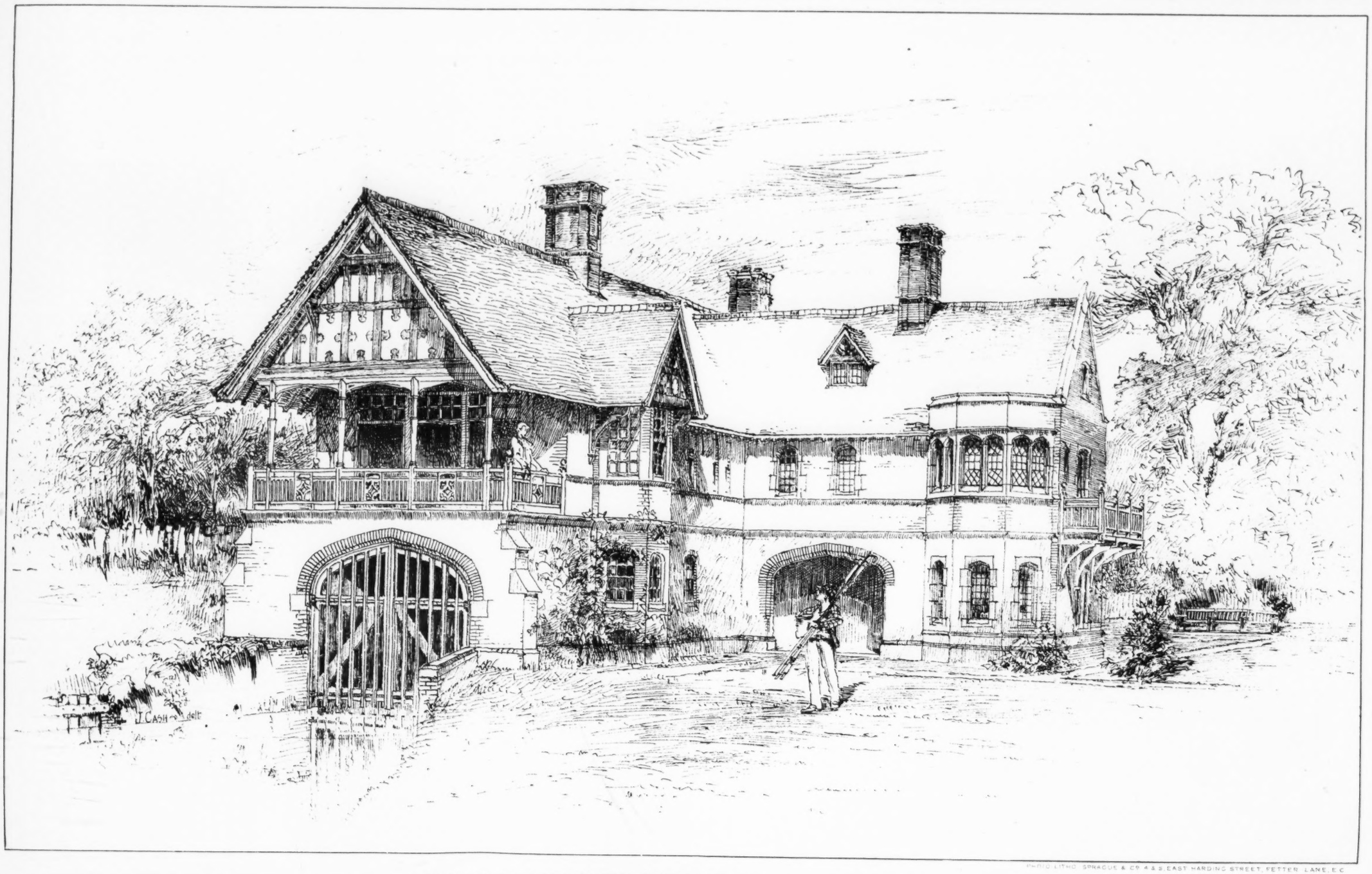

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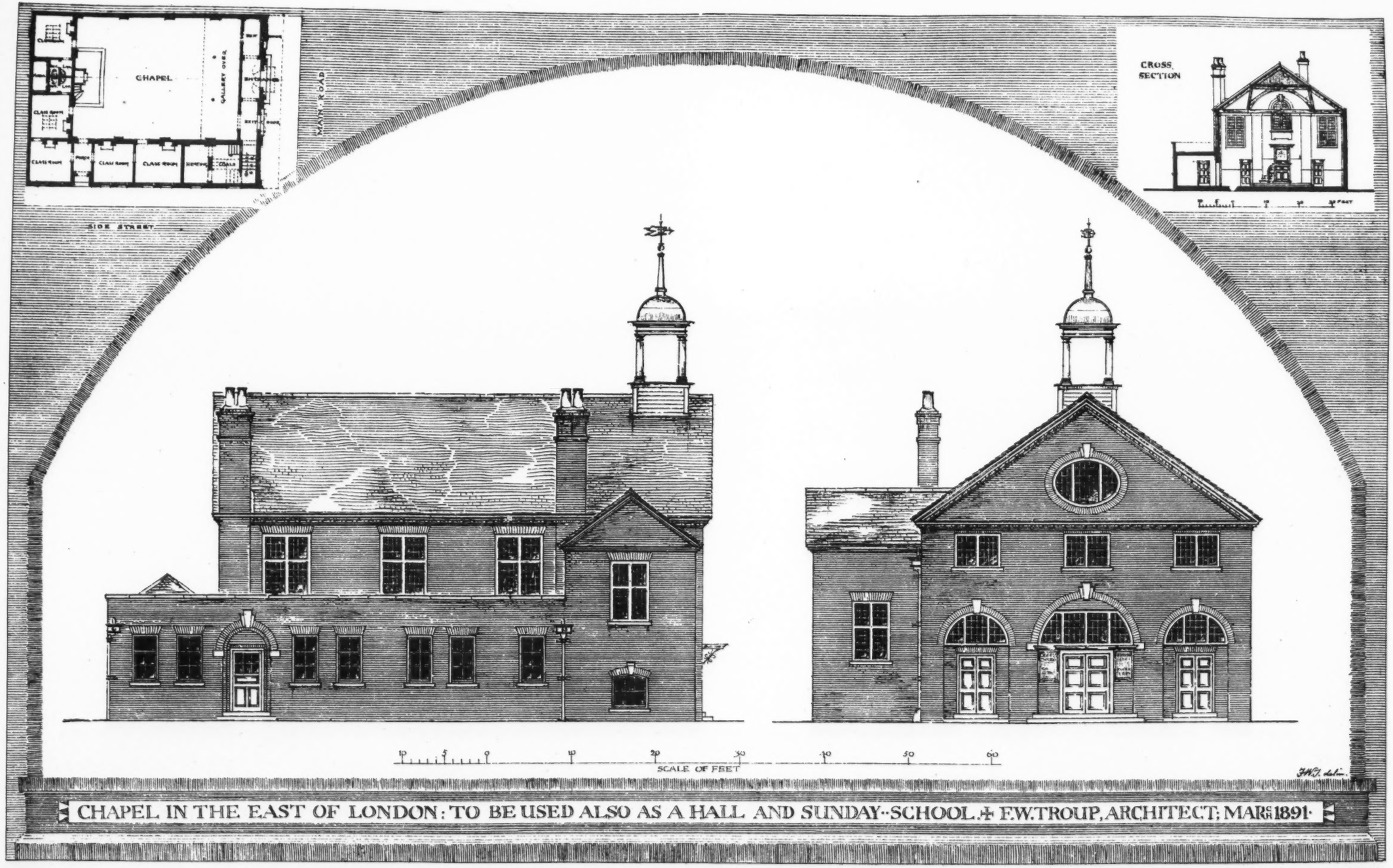

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